



### METEOROLOGICAL SERVICE, DOMINION OF CANADA.

# Monthly Werther Review.

VOL. XXIII

JANUARY, 1899.

No. 1

### (NTRODUCTION

In compiling the prereceived at this office for ' storm signal agents. The States, we are indebted by Stropes to the construction of swift of the 22 construction of the construction of

### BLMARKS ON THE WESTHING

The weather of January, a Current was an extraorded and the control of the desired and generally unimportant, as a general control of the con

In British Columbia to continuous to the most product of the month, when there were end may be of the first product of the month, when there were end may be of the first product of the first product of the month. On the coast of meighborough shows in the second of the month. On the coast of meighborough shows in the second of the month.

The weather in the Nov. West Tormonous as a subspace of the month, when minimum to produce of the control of the subspace of the control of t

In Manitoba the waves and transverse of the strength of the however, was not so to taking the strength of the

Although the temperature of Courago of the courties of the courago were the conditions being the record of the courago of the

In the Province of Queen, the weather was recalled most part storage of a first the mean temperature being above average at most places and the presignation becomes The lowest temperatures reported were —4200 on the 2nd at Chickwini, and the control of the storage Richards on the stage hand 5100 was noted at the latter station on the 5th, and 4500 or higher at severy places on the same late. There was post sleighing throughout the month, but the depth of spokes are not exceeded twenty in case.

The weather in New Brun, wick was somewhat minder that the all the precipitation generally be waverage. Minimum temperatures occurred at most stations on the 2nd and 3nd, the lowest 220,6 and reported from Sussex on the latter data. The highest temperatures, which accurred at nearly distances on the 5th, were from 45, 0 to 10.6. Therewere many bright days, and seelgning was fair through a the month in most districts.

On the Atlantic side of Nova-Scotia the weather was unusually mild, and there was much rum, whilst elsewhere it did not deviate much from normal. The coldest periods, when temperatures at or near zero were recorded, occurred in most districts between the 1st and 3rd, from the 10th to 13th, and 26th to 31st.—14.5 being reported from Truro, and—10.0 from Pictou on the 2nd.—Sleighing was nowhere very good, and in districts contiguous to the Atlantic the ground was bare after the 3rd.

In Prince Edward Island, the weather was generally fine and enjoyable, and the lowest temperature recorded was = 10.0 at Summerside and Hamilton on the 2nd, while 12.0 was reported, from each of these places a few days later. At Chirlottetown, the maximum temperature was 43.1, and the minimum = 7.9, the former occurring on the 7th and the latter both on the 10th and 11th. At the last mentioned station the depth of snow on the ground on the 31st was four inches, nevertheless there was fair deighing in most districts.

F. F. PANNE.

### ATMOSPHERIC PRESSURE.

The mean atmospheric pressure was from average to 940 inches above from the Lower Lake Region to our Atlantic Coast, and below average in all the remaining portion of Canada, the deficiency being as much as 400 inches to 430 inches over Manitoba, the Territories, and the larger portion (4) British Columbia.

### HIGH AREAS.

There was a large amount of high pressure during the month. The eight areas traced were all of fairly large dimensions, whilst there were others of less importance not traced whose paths it was not possible to accurately determine. No. 1. This area was a continuance of No. 1X, on the December chart. On the morning of the 1st it had two well-defined foci; these, however, united during the day, and on the 2nd the area moved off the Middle Atlantic Coast and gradually passed out to sea. No. 11, first became well defined in the North Pacific States between the 4th and 5th. It travelled with great rapidity to the Lower Lake Region, and on the 6th it continued its rapid movement, over the St. Lawrence Valley to the Gulf. It was of moderate energy throughout. No. 111. This was an area of moderate energy which travelled between the 5th and 8th from the North Pacific States south east to Tennessee, and thence off the Middle Atlantic Coast. No. IV. This area was well pronounced to the northward of Manitoba on the 8th. It quickly proved itself to be of great importance, and between the 9th and 13th, as it travelled south east to the Ottawa Valley and thence off the New England Coast, it brought the minimum temperature of the month at most places from Manitoba to our Atlantic Coast. No. V. This was a fairly important area which developed over the North west Territories between the 15th and 16th, and afterwards travelled to the Lower Lakes, where it was central during the night of the 18th. It afterwards possed to the southward and dispersed. It was not accompanied by any very low temperatures, except in a few places, but it was attended by sharp freezing weather generally. No. VI. This area moved into the North-west Tecritories on the 25th, attended by decidedly cold weather, and on the 26th the temperature was from 34 to 36 below zero in the Territorics and Manitoba. On the 27th, with diminishing energy, the area passed southward to the Central States and on the 28th off the New England Coast. It brought hard freezing weather from the Likes to the Atlantic, and a minimum of from 20 to 26 below zero in northern localities. Nos. VII. and VIII. Both of these areas first appeared in the North-west Territories, one on the 27th, the other on the 29th. They pursued very much the same course passing southerly to the Lower Mississippi Valley, and then diminishing in energy. They were each attended by very cold weather, and this cold weather was very generally experienced in all portions of Canada.

### LOW AREAS.

Fifteen low areas have been traced during the month, of which five appeared at first in the extreme southwest States or Mexico and moved east or north-eastward, two came from the middle States and moved northeastward, five from the North West Territories with a south-east or north-east movement, one started north of Lake Superior with at first a south-east and then a north-east course, one passed north-east up the Gulf Stream, one came from the Pacific near latitude 47 and travelled in an erratic course across the continent, and one which has not been tracked hovered for some days off the Vancouver coast. The mean rate of travel was 424 miles per hour.

No I was centred near Cape Hatteras on the night of December 31st, as a slight depression, and during the 1st January developed considerable energy as it passed to Newfoundland. It gave a moderate to fresh gale in the Bay of Fundy and off the Nova-Sco ian Coast and a general fall of snow throughout the Maritime Provinces. No. 2 was off the Vancouver Coast at the end of December and hovered there until the 3rd of

January when it dispersed, having caused strong gales and hearty falls of some in Butish Countries. started over Colorado on the morning of the 3rd, whence it moved north-castward with increasing energy across the Lake Region, where it caused a fresh gale and a general fall of rais. From the Lake Region it passed to Labrador, causing a moderate to fresh gale throughout eastern Canada, on the 5th. No. 4 spacement over Mexico on the morning of the 5th, and with increasing energy moved rapidly north castward. If caused a moderate snowfall over the greater part of the Lake Region and Quelec, and in the Waritime Provinces snow or rain with moderate to fresh gales. No. 5 was an area of small dimensions, but in conjunction with an important anti-cyclone, which followed it from the North-west, gave string winds or goderate gales with light local snowfalls from the Lakes to the Atlantic. No 6 was quite unimportant and first appeared over Mexico on the 9th. It moved to the Lower Mississippi Valley and dispersed. No. 7 was off the Vancouver Coast on the morning of the 10th, and thence moved eastward to the north of Lake Saperior. It was of wide extent at the Pacific Coast where it gave high winds and rain. It brought milder weather to the North-west and a light fall of snow or rain, but had on reaching there diminished considerably in energy. From the north of Lake Superior it moved south-eastward to the New England Coast and for a time two distinct for a were formed, but these coalesced on reaching the Atlantic Coast. It re-developed as it then passed north eastward across Nova Scotia and gave a heavy fall of rain or snow in the Maritime Provinces. No. 8 was first noticed over Texas on the morning of the 13th, and from that state moved rapidly morth eistward to the Lower Lake Region, where on the 14th it caused strong winds and gales with rain and sleet, and on the 15th it moved over the Maritime Provinces where strong east winds and rain were followed by a north east gale. No, 9 app ared over the extreme North-west and moved to the north of Lake Superior, where it apparently dispersed after having caused high winds and light local snowfalls in Assimiboia and Manitoba. No. 10 vas also first noticed over the extreme North-west on the 18th, whence it passed slowly south eastward to the St. Lawrence Valley. It gave strong winds and gales in Assiniboia and Manitoba, and subsequently caused strong winds and gales with local snowfalls in the Lake Region, and fresh winds with local snow or rain in Quebec and the Maritime Provinces. Nos. 41 and 12. Late on the 22nd a trough of law pressure extended from north western Ontario southward to Texas. By the following evening there were two distinct foci, one north of Lake Huron and the other over the Lower Mississippi Valley, the former proved unimportant, and as it moved eastward on the 24th was accompanied by but light local snowfalls, while the other passing north eastward with increasing energy cause I gales with heavy precipitation on the Middle Atlantic Coast, and subsequently early on the 25th a heavy blow with rain and sleet in the Maritime Provinces. No. 13 apparently came from the northern portion of British Columbia and was first seen on the chart on the 23rd. From thence it moved south-eastward to the Lakes giving strong winds or gales and light local snowfalls throughout the North-west. On reaching the Lake Region it developed considerably, giving fresh to strong gales and head snowfalls. From the Lakes it took a north-easterly course passing over northern Newfoundland and Labrador on the 27th, and causing fresh to strong gales throughout eastern Canada with light snow in Quebec, and rain in the Macicine Provinces. No. 14, was apparently subsidiary to No. 13 and was small and unimportant until it reached the Gulf of St. Lawrence where it caused strong winds. It was first shown on the chart as being centred over Manitoba on the morning of the 27th, and moved south-eastward to the Upper St. Lawrence Valley and thence north cast and east passing to Labrador and Newfoundland on the 29th. No. 15 appeared on the 29th to the north of Lake Superior, but was a shallow depression of little importance. It passed to the north of the Ottawa and St. Lawrence Valleys and crossed Newfoundland on the 30th. No. 16 was over New Mexelo on the 30th and passed eastward and off the Atlantic Coast. It was of moderate intensity,

### WINDS.

In British Columbia during the month the winds increased to gales on eight days, on three of which the force of a fresh gale was reached and one, the 31st, that of a heavy gale. In the North-west Territories the winds were fresh or strong during the greater part of the month, and the force of a gale was reached on a few occasions; the most prevalent directions being westerly and southerly. In Manitoba the force of a gale was reached on several occasions and the winds, as in the North-west Territories, were fresh or strong during the greater part of the month, whilst westerly was the most prevalent direction. In the Lake Superior district one gale occurred and fresh to strong winds were frequent. In the Lower Lake Region there were nine gales, three of which were strong and six moderate, whilst the winds most in evidence were from between S. & W.—Seven gales occurred in Quebec, of which four attained the force of a strong gale and westerly were the most prevalent winds. In the Maritime Provinces the winds, which were mostly from the west, attained the force of a gale on seven occasions, four of which were strong gales. A brief description of each storm in eastern Canada where navigation remained open is as follows: January 1st. A moderate gale in Maritime Provinces waich locally increased to a fresh gale. January 4th, the Maritime Provinces were warned for a strong gale on the 5th and a fresh to strong gale occurred, Grand Manan reported a velocity of 48 miles per hour from the S. W.—On the 6th, at 10 a.m., warnings for a strong gale was sent to eastern Canada and later in the

day a fresh to heavy gale set in, Grand Manan reporting 48 nules per hour from the cast. Muritime ports were warned on the morning of the 14th for a moderate gale and later in the lay and on the 15th moderate gales prevailed. On the 16th also a warning for moderate gale was sent + 1 next day a moderate to strong easterly gale occurred. A warning was sent to eastern stations at the 24th, at 2 pain for a strong gasterly gale, and that mgat a strong gale set in the agent at Lise and reported tremendous seas, whilst at Haliffx the wind reached a velocity of 42 miles per hour. A moderate to a avy gale occurred on the 25th and 27th, which was warned on the morning of the 26th.

### BRIGHT SUNSHINE

The amount of bright sunshine was helow average to a small extent over Vancouver. I sand and British Columbia, and above average in all the large remaining portion of the Domaion, the greatest general amount above average occurring over the Province of Ontario.

### TEMPERATURE.

Temperature conditions were in several respects rather remarkable, e.g., only so in the Lake Region, where the change from minus to plus, or view cersa, we sorry sharply defined. This was very noticeable between Welland and Stratford, the former place being 3 above and the laster 2 being a receive. From British Columbia to Keewatin Territory temperature was everywhere above average, the excess being as much as 6 in Northern Alberta. From the Eastern portion of Outgrie's cour Atlantic Coast, even in Cape Breton, it was also in all localities above average, but at the majority of places the amount distinct exceed 1.

The Highest and Lowest Temperatures in each Proxime during January, 1899, were:

British Columbia,	69 0 on 19th at Ladner.	12 5 on 5th at Midway.
North-west Territories,	50 0 on 20th at Macleod.	<ul> <li>(** 22.0 on * 1st at Duck Lake,</li> <li>(**) 5 on S at Oonikup.</li> </ul>
Manitoba,	(36 0 on 18th at Portage la Prairie. ) 36 :0 on 21st at Emerson.	17 :5 on 7th at Emerson,
Ontario.	(58) 0 on 16th at 8t, George, (8) 0 on 16th at 8t, Ann's.	on Oon 9th at Missanabie.
Quebec,	51 Con 5th at Richmond	42 0 on 2nd at Chicoutini.
New Brunswick,	49 6 on St. at St. Stephen	26 G on 30th at Sussex.
Nova Scotia,	53 0 on 7th at Womaille.	.4 5 on 2nd at Truro and Parrsboro.
P. E. Island,	14 Con 5th at Chirlotterown.	10 0 on 2nd at Summerside and
•		Hamilton.

### PRECIPITATION.

In the Lake Superior District, the Ottowa and St. Lawrence Valleys, and also over the greater portion of the Maritime Provinces, precipitation was below average, except very been y, where it was somewhat exceeded. The greatest general deficiency occurred in the Province of Quebec, Quebec, the fitself being 1-7 inches below average, and Father Point 2-9 inches below. In the Northwest Territone and Manitoba it was on the other hand as a rule above average, and only very locally below, the greatest amounts above average being 0-9 inches at Winnipeg, and 1-0 inch at Prince Albert. In British Columbia, Vieta a was 0-7 inch below average, but Lower Maniland stations report a heavy precipitation. The most notice for feature of the January precipitation was the phenomenally heavy snowfall in the Georgian Bay Region, whose at the close of the month the amount of snow reported on the ground was at Parry Sound, 56 inches. Sprucedale, 48 inches. Beatrice, 37 inches; Haliburton, 21 inches; Collingwood, 36 inches. Owen Sound, 27 inches; Bognor, 24 inches. On the other hand, in the Lower Lake Region, there was little or no snow on the ground at the end of the month.

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, JANUARY, 1899.

a Barometer not reduced to Sen Lovel \* Stations not furnished with Registering Thermometers

Zor of Fogs. smrots rebund The .o.Z. No. of Auroras. Sec of Part days. STORE TO TO ALTER - YEAR Heavivest fall dimontal Precipitation, шод ээнэг фід THROWN Velocity of Wind. -th bas sted and and and Figure day's (Alfeeler) Mean miles lotal number of hours, Ö OF WIND FROM  $X^*$   $W^*$ 11. 11.8 .× PRECTION S' E' Ъ. Z' E' Χ. tely clouded.  $^{9}$ X Cloud amount Mean relative Mean temterature of \*aduta Mean daily .189770.3 TEMPERATURE. Highest Lears of serie. Бійстепее Ігота атетаке. Mean េះដូចជា PRESSURE. Lowest. Highest. Mean reduced. Elevation above Sea (영문보역 6명) 대로 발생 6보 경기 첫 대역 4개 경복 경임 영료량수 8명 본 모임 발범 수 로 환경 소 관 경 발범 인 명명보 우 보기 연극 중 4명 본 6명 역 로 지역 약 조 본 모임 44 5 8 S + 6 E 7 Longitude W. BENES (SEEAS) . Z afutita<br/>J $\boldsymbol{X}_{i}$ NULLARS BRITISH COLUMBIA:

# PRESSCIRE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMENON OF CANADA, JANUARY, 1899

a. Barometer not reduced to Sea Lovel. \*Stations not fittinished with Registering Thermometers.

	.o.1' _ Z			
- 1/4	1 0.313			
	111,1			
1 1	1.1.W (1)			in the second se
1	H. O. H.			
5	near Leavy 10 Line			
NITATION .	order.			sister and the second
- REF	41:0007		ı	- 1 to 1
			- 14	
	111 II			
VIEW ID. of WIND				
2			<u></u>	
	- 6			
- E	201 - 10 OW			
	1 - (m ) - (			74
		- 4		1.2
				Target and the second
NON	11 /			
=	. 11			A**
=	1478	/ =		EE
3	- 2	7 1 -		and the second second
1 2				_ + . / * . / *
DELLA TION OF WAND FROM	8			
=	.H			
	1 ×	= : / = = = = = =		
		17 / 1 - 2 - 7		15 - 2 - 15 - 15 - 15 - 15 - 15 - 15 - 1
-22/11	The order of the o			
10.0	The area of de			
-1111	D DEATH			
	M. a remper or			
	54114			
	A data modely	7/1:: = (		AZ TERRITERAL ENAL LINE ENAL ENAL ENAL ENAL ENAL ENAL ENAL EN
	12 may	71771		
1 3		1 ATRUM 4 4 ARM		and the same and t
Тъметователа	55.01			
N I S	25 dt H	400544 841		1
=	1,11 mln -1, 1 f			
	am dagrij			
	1	The same of the same of the same	- / 30 -	the second second second second
	Aroll ;	******** = ' _ '-'		#==10.0 ##1021/2002 ###
	100 100	211 2112 21 2	7 -	111 g. AZ (1111 11 )
-	76.13	2	#= 7	=======================================
911	Leaned			
37 (S-S)				
PRESSIRE	H gast.			1
PRESSI	Mean te limed H = 0.00 H   15 m est.			
PRESSI	Mean te limed H = 0.00 H   15 m est.		1	1
PRESSI	treatment and formal treatment of the second	Signa Gigar Estata da cara Estata da cara da Estata da cara da cara		2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
PRESSI	Mean te limed H = 0.00 H   15 m est.			2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
PRESSI	A straight M. A			2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
PRESSI	treatment and formal treatment of the second			2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
PRESSI	A straight M. A			2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
PRESSI	Z shurten,  "A dan ven,  se shurten, and besteller in the property  decretified in the property  from the property of the property  from the property of the			2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
PRESSI	Z shurten,  "A dan ven,  se shurten, and besteller in the property  decretified in the property  from the property of the property  from the property of the			2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
PRESSI	Z shurten,  "A dan ven,  se shurten, and besteller in the property  decretified in the property  from the property of the property  from the property of the			2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
PRESSI	Z shurten,  "A dan ven,  se shurten, and besteller in the property  decretified in the property  from the property of the property  from the property of the			2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
PRESSI	A straight M. A			2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
PRESSI	Z shurten,  "A dan ven,  se shurten, and besteller in the property  decretified in the property  from the property of the property  from the property of the			2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
PRESSI	Z shurten,  "A dan ven,  se shurten, and besteller in the property  decretified in the property  from the property of the property  from the property of the	22 - 24 - 25 - 25 - 25 - 25 - 25 - 25 -		3 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

000000000 00000000 17000000000000000000	e
열절조克성으로움으로 (고급급으로 2명급 )	
本語館会で日本本部   BENKEEN 6   POINSERSERSE 1995   199	
ФС	
\$258500000000000000000000000000000000000	¥ -
	÷
	, , , ,
	- 2 · 3
<b>33 등 12년전</b> 기계 12 년 12 년 - 12 년 12 년 12 년 12 년 12 년 12	= = = = =
84 Pintania (1976) a tradición de la companya della	w 1
다는 마음으로 마음을 만든 것이 가스 교수를 가는 다음 수 되는 것이 되는 것이 되었다.	,
## [# [6월살이] ## [# [# 15 15 15 15 15 15 15 15 15 15 15 15 15	- 7 _ 1
한테 [# 1282] 1 [# 1 2 12   1 15   15   15   1 12   1	
BRIA MARAMAN TO CONTRACT OF STANDERS	. •:
EX Present to the content of the Con	, - =
0- / -972 <u>2 . 20 6 2 . 26 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 </u>	
The X Page 1 of the street of	
2010 10 K 5 1	
	r
in the sign of the	
253 <u></u>	4. <sup>1</sup> . 1
<b>요요요########</b> 용용성도성### 10 - 트립스트워크레스	
- 여러 - 소리 - 여러 - 선물 - 스크리 -	
######################################	
### ### #############################	
######################################	
######################################	
# 200 年 200 年 200 年 200 日 20	
######################################	
######################################	
######################################	
# 200 年 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	TOTAL
### ### ##############################	TOTAL
### ### ##############################	TOTAL
### ### ##############################	TOTAL
######################################	
######################################	TOTAL
######################################	11217
##23 PM (1997年 1997年 1	10.000
### ### ##############################	10.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1
### ### ##############################	10.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1
### ### ##############################	10.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1
### ### ##############################	Compared to the compared to

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, JANUARY, 1869 of Elementer and reduced to as they, a station, and intrached with Registering Thermometric Station and reduced to as they.

	STOP N		= =	+			
	and /						
12011	$\frac{(1+\log 4\ln n + e_1)}{(\log 4n + 1)}$						
£	11 Lat 1 begins 1						
313	0.1-1.1 (AP 01 1)						
1					-		
-					=		
=	ad triple exercises					*	
	* 21 ( 15 ) - 11						
V.Ere	and so that of						
	andmu to the			=:.:===================================	<del>-</del> -		
	1						
N.S	×111.			4		<u>-</u> .	~
- S	111						
1 1 1	11		-				
2	-		ore rela			1.7	
Prize they of Wind Leng	118	,					
Ξ							,
	" '						
	Tobalo A	,	/				
10 1	Month of the						
- 11 14	September 1990						
[0 alt	Mean temperate						
	That mode		7.7 4 24				5
	*.11	- **					
	.14 +# s.l.	- A Hille				77	.= 1
WILLATIE		- : -					= 1
T.	15 (1711)			<u> </u>	2	- 1	6
÷	Lagurage mort	2444	A Commence of the Commence of	/			- 1-
	seu dephij	 1.544 <b>5</b>	~// =/	2 . (8)			-,
	Жени.	: : =		200	2 5 5	ēru i	2
	Les out		A			<i>;</i> ·	5
Parssem	,189 # vI	= 1 1 1 1 1	== 1		E :	71.	South the first of the second
TE S	.tenlatH	E : :::	515 1 671 1 684 1				Æ A
	irement mek	<u> </u>	243 - 883 -	i Fin F Fin F	달 된	1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1	- i
rag i	Zoda nonicial I test in devel	11 11	<u>#</u> #1333	<u> </u>	4	ja .	2
	'A opanismo L'	- 14712	454777 - 11	- <u>-                                  </u>		-13-56	=
	Z shunted [	17577	erretari.	1 - 4 - 1 T T	13.6	24.4.4.6.0 27.1.4.6.00	12 22 23
	1	. 41444			55	ボード系型 Luppe== 1 11	i.
	1				:		-
	Net Virginia				25.5		
	′ i	Orygen Continued, Alvino Valorista I. Pr Bud Morks Depr	N. 9. De Norden.  To derfred	A CONTROL OF THE CONT	P. E. Israxo Charloffetoan Georgefoan Summers te Ramilton	NEW CONTRANT St. John's Keleman Mores "Cuper Negman "Ament Point "Point Roth	Brayley:
		gR. #44	Peret legist		当ちき表量	##Z-5-14	Bern

## PRECIPITATION AT STATIONS REPORTING RAIN, SNOW AND WEATHER, DUTING JANUARY, 1899.

			Rvis.							
STATIONS.	An ora v in inches,	No. of Days Of or Ober.	No. of Fair Days	Hearter Left in Month.	Date	Anglaria	No. 3	H = L d = i M = w	D	
British Containa Beaver Creek Langley Goldstream Lake . Nanauno Royal Oak Salt Spring Island	7 88 9 91 6 40 6 43 5 65 5 63	11 20 9 13 13 15	16 11 15 15 17 13	1 97 1 23 1 26 1 87 6 95 1 85	19 19 19 19 9	14.3 4.7 11.0 9.3 1.5	7	00 m 6 m 6 m 6 m		
North-west Tensiroides - West Beaver Hills	0.10	1	17	n 10	24	9.5	11	3.0		
MANITOBA — Oak Bank Norguay Harthe Harthe Harthe Point in a Crossing, Rapid City Belmount Morden Shoal Lake Gretna Turtle Mountain			26 20 21 21 25		1;	10 0 X 0 0 0 1 X 0 0 0 0 0 0 0 0 0 0 0 0	10 10 10 10 10 10		21 21 22 20 (21	1 0 (40 c)
ONTARIO Lansdowne Sparrow Lake Princeton. Warton Wooder Jermyn Cherry Vatley Mostagme Oliver's Ferry Wyoming Goberich Georgetown Orangeville Sunshine Hubrey Ennismore, Providence Bay Deer Park Kitley Ennismore Croydon Coldstream Robhn's Mills Parmon Arben Watford Dealtown Searboro Cutton Huntsville Midland Thompson Eligin New Brunswick Point Escuminae Nova Scotta— Point Escuminae Nova Scotta— Port Morien P. E. Jaani— Port Hill	1 68 2 00 1 4.7 2 18 0 76 1 1 27 0 76 1 1 10 0 76 1 1 10 0 17 1 10 1 10 1 10 1 10 1 10 1	01 #55520 #33#3666222 8#03#35##140145022##121   5   21   #	24 18 22 12 12 12 12 12 12 12 12 12 12 12 12	0 70	11	10 5 7 6 6 6 6 7 7 6 7 6 6 6 6 6 6 6 6 6 6	4 12 15 16 16 17 17 17 17 17 17 17 17 17 17 17 17 17	1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	12 12 12 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15	70 mm 1

- 2 11 11
- 3. Red December
- L. H. 5 . . O
- 5 5.
- 7. 51 ...
- 8. Pembers of 2.1V
- H. Gris Care (III ) 1.

### Da. . . IV

- 16 Manueller, IV. Cristia. M.
   17. Soils More vin IV. Mo.
- 18. Minimum a, O. G. agetonic (1995) 8 A.
- 2 to Massesson, 414.

- 24 Magasha (IV), Roman (2) 26. Pemokassa sang, IV), T
- 27. Pembara or sing, 111.
- 28. Russen, I. Troh rne, Driv. L. J. M. In\_ 11 Oonikup, St. Albans, TV.
- 29 Russell, III., Minnellise, II., Queer, IV, P. (1997), 10. [ V , M Sevanne Pembina crossing, III., St. Alica's IV
- 30. Russell, IV George syn, IV: Hip stage V Brant IV and erne, M of 1002, Calvin, Savanne, W. Berver Hills, IV., Pemiena coe in, IV
  - 31. Savanne, Pembina crossing, IV., Tugish IV.

Esquiralt																
Kuper Isaact .																
Agassiz, E.C.																
Battlefool .																
Indan Hool																
Branden.																
White $\varphi$ .																
Durham.																
Windstrak.																
Toronto																
Lindsay.																
Barrie .																
Kingston .																
Ottawa																
Montreal																
Fredericton																
																ě
	÷	_			Ξ								Ē			Lidinita
	Fequin d	Ξ	.7	-	Harrier H	-							12	1		-
	<u></u>	_			Ē	2	=	-	=	-		-	ŕ	3	7	-
Mean proportion for month Constant sunstant	0 E	0.11	1. ()*			0.47				0.3	11 .			- 2		. 10
Difference from average : .	0.5						pl 1		1.5	(1)			1004	0.7	- +	C el
Maximum daily amount	0.77	0.60	0.70	0.90	0.77		0.00				1 (8)	1 -				
Date	17		15	20		25	0.	1-	1 -		>	ter	. •	1.5	21	1
No. of days completely clouded.	. 16	15	23	11	~		21	21	11		9		19		; 11	
													_			

4

### FORECASTS OF TANKAL

at every good on ) is a set of a public of the set of the property of the consequence of the set of the The atanber of productions issued lining the monoconduct Sect. T

		( )		
District		Pat ;		172 3
M.a(ab)	+4	11		79-1
Lat. Same		15	1	-1.2
Love L. Robert				75.0
Good and Bay			į.	. 72.7
Outcha Villey		11		81.7
Upper St. Lewience		1.4	7	~1 6
Lower St. Lawrence		6		~4 6
Golf		13		88.9
Maistime Providers		26		7 G
Total =	×	145		NII N

In order to obtain the percentage of velocat, enof the real to a good to be partitionally entired is divided by two and added to the number fully verified, and the result only if the following number is used.

In ascertaining to what extent the predictions have been verified. We have from the agents at all observing stations, as well as the telegraphic reports, are used.

METEOROLOGICAL OFFICE, Toronto, February 26th 1899.

R. F. STUPART, Director.

### METEOROLOGICAL SERVICE, DOMINION OF CANADA.

# Monthly Weather Review

VOL. XXIII

FEBRUARY, 1899.

No. 2

### INTRODUCTION

In compiling the present Review the principal data made use of are the telegraph a repease of observations received at this office for the purpose of weather forecasting, and reports by man from voluntar, observers and storm signal agents. For the material use in tracing the paths of areas or high and beyone are in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

### REMARKS ON THE WEATHER.

The weather throughout Canada was remarkable for low mean temperatures and light precipitation, the former being below average everywhere excepting over a portion of Quebec, and the latter below in every province excepting British Columbia. The minimum, temperatures which were exceptionally low in many portions of the country occurred generally on or before the 15th, and during the latter half of the mouth the cold weather was more moderate. In some districts the ground was either bare or only had a light covering of snow during the greater part of the mouth and some anxiety was expressed for the grain crops by the farming community.

In British Columbia the weather was unusually gold and stormy and the amount of precipitation was heavy in most districts. There were some exceptionally low temperatures during the u onth, namely. 30.00 at Barkerville on the 3rd, 39.90 at Midway on the 3rd, and 30.00 at Donald on the 4th: 23.55 at Nacia Lake on the 3rd, and 23.4 at Tobacco Plains on the 11th. Owing to the severe weather, vegetation was very backward at the end of the month.

The weather in the North-West Territories was intensely cold, fine, and comparatively dry, the mean temperature being from 4 to 12 below average, and the precipitation somewhat below. The most severe weather of the month occurred on or before the 11th, temperatures between -4 \(\text{c}\) and -50 being recorded in most districts and -52 being reported from Kneehill. From the 12th to the 29th the weather was comparatively mild and the highest temperatures recorded, which were from 4 \(\text{c}\) to 56, because in on a about the 18th. After the 20th, the weather was cold and continued so to the 28 h. On the last day of the month the depth of show on the ground was from 2 to 8 inches, and deighing after the 18th was very bad in many districts.

In the Province of Manitoba the sequence of the weather was much the same as in the Territories, and the cold was equally intense. The date on or about which the minimum temperature occurred was also the same and between -43 and -52 were recorded. The depth of snow on the 28th varied with the locality, from one to fifteen inches being reported.

The weather in Ontario was unusually fine, and bright, and exceedingly cold up to the 15th. The mean temperature was several degrees below average throughout the province, and exceptionally low temperatures occurred generally about the 11th. In the coldest and most northern districts minima between -40 and -55 were recorded, whilst in the most southern counties from -12 to -20 were reported. The weather during the second half of the month was much milder and the precipitation during this period was mostly rain in the southern and snow in the northern portions of the province. In districts bordering the Lower Lakes the ground was bare, whilst in more northern districts there was good sleighing throughout the month.

In the Province of Quebec the weather was about normal, and the sequence was similar to that in Ontario, it being much colder during the first than during the latter half of the month. The precipitation was mostly snow, and there was good sleighing throughout the month.

The weather was fine and very cold in New Brunswick during the first half of the month, but it was not so severe as in the more western provinces. During the latter half of the month it was comparatively mild.

But the maps to appeal tree in Latinfact  $\mathbf{w} \to \mathbf{n}$  (value (2), though the great. There were four  $\mathbf{z}^{(1)}$  during the manth, and on the 13th and 11th there was heavy drifting show which blacked both treet and railway training the state of the s

The weather conditions in Novi Sestia were much the same as it. No end rainfal being somewhat below average, and the coldlest weather one at the month. During the period of milder weather which there is appraising to rain occurred, much of the snow was melted, and on the 28th, the ground of the Province.

The most set of that s was not on the most set of gase occurred

Branswick, both the temperature addring the first fifteen days of well above 40 at many places and bare throughout the greater part

In Prince Edward Island the weather was extremely bright and fine there was however continuous and extremely cold weather during the diest helf of the month, and the more comperature was below average. Milder weather previoled after the 15th, and it become more unseitled. The precipitation which was also below average was mostly how. A heavy gale with move curred on the 13th, on part of the 14th. F. E. PANNE.

### ATMOSPHERIC PRESSURE.

The mean distribution of pressure was decidedly remortable. Off our Prolife Coast, the pressure was as much as \$150 of an inchancy average, the an anti-of-exercise diminishing a word until the normal was reached at a line drawn southeastward from Bartheford to Qu'Appelle. Through of the large remaining portion of Canada pressure was everywhere below average, the diffuse y reading the at a much in the Gulf of St. Lawrence and the Cape Breton Coast, and further least again over Newfaman to the deficiency was as much as \$200 of an inch.

### HIGH AREAS.

There were only four aceas of high pressures offset only will define to be traced but No. 1, which was of unusual importance and presistency existed on the continent during the fact dixteen days of the month. No. 2 was the area of next importance

No. I was probably one of the most persistent anticy lones on record on the weather of the whole of Canada came under its in linence. On the 31st of January it passed may Northern Alberta in rear of high areas No. 7 and 8 on the January chart. From the 1st antil the mouning of the 11th, the main area was centred in the North-West Territories or State , more frequently in the torner than make latter, and apparently it was further strengthened during this protracted interval my at least two ulermay areas. The system reached its maximum in the early morning of the 11th when the barometer it Swift Current was 31:42 inches reduced to sea level. By the night of the 11th the man book of the arcelled travelled southwards to Dakota whence it moved slowly to Texas gradually damini hing in energy = O r the 13th, the system recurved northeastwards from Texas and on the 16th dispers diover the Mortina Program . In the Territories and Manitobatthe 1st to the 11th, was probably one of the rest severe persons each experienced in the country, the minimum night temperature was usually serveen 30 and 40 active ero are the maximum, except in Alberta on the 4th, 5th, 6th, and 11th, never rose above zero. Every color weather was a societies experienced up to the 15th in Ontario, Quebec and the Maritime Province - Pairish Countries at a factor every spell of cold weather. No. 2 was also an area of considerable languages to move limb the North West Territories on the 21st and at night was centred over Alberta where on the marning of the 22nd the barometer reduced to sea level was 31.00 inches and apwards. It then travelled southeast virus to the Upper Mississippi Valley and on the 21th recurved northeastwards to the Lower Lake Region and thence over the Maritime Provinces. It was attended by a return to decidedly cold weather in all localitie which lowever from the Lake Region to the Atlantic Coast soon gave way again to mild conditions. No. 3 was an area of moderate energy. It passed into the North-West Territories on the night of the 24th and then envelled southeastward to the South Atlantic States where it dispersed. No. 4 was securedly subsidiary to No. 3. It was situated as a feeble area in the North-West Territories on the 27th. It moved seither twinds to the Lower Mississippi Valley, thence between the 3rd and 4th of Murch over the Lover Like Region to the Atlantic Coast becoming somewhat energetic as it passed over the Maritime Provinces.

Between the 16th and 20th several minor Highs passed souther two I from the Pacific States to the region of the Gulf of Mexico and then broke up but none of the essure well enough defined to be definitely traced.

### LOW AREAS

Eleven areas of low pressure were charted during the month, and the most important of them were those which travelled from the Region of the Gulf of Mexico and thence up the United States Atlantic Coast to the Maritime Provinces.

No. I was a molerate depression which on the 1st travelled from the Middle Pacific States to Texas thence northeastward to the Jersey Coast and to the southward of Nova Scotia. Owing to its influence light falls of snow coursed from the Lakes to the Atlantic between the 3rd and 4th. No. 2 first gave signs of a marked develop-

ment when over the South Atlantic States on the morning of the 7% . It probably origin the states from the Pacific Coast and appears to have been the last of a series of minor 1 to 100 pt. 100 pt. As it moved up the Atlantic Coast it developed into a severe storm and our many exceeding the Sth swept over the Maritime Provinces attended by firesh gales and a fall of show the attended to good in the St. Lawrence and Otta va Valleys and at the same time there were [g] [1, 1] [1, 1] Region. No. 3 was the most important area of the month in that it gave the heaving general  $g_{ij} \mapsto H_i \mapsto g_i$ Canada. It appeared near Florida on the 12th and travelled quickly up to it saves States Act with Control developing rapidly; on the norming of the 14th when centred in the Bay of Faray the barons torac Yaam as a was reading 28.62 inches reduced to sea level; a here vigule and shows form pressing distinguighout the Muritime-Provinces, and the Gulf of St. Lawrence. No. 4 appeared to Not hern But'd. Commedian the 12th and or the 13th it passed over the North-West Territories and Manifolio a committed by the registron of uniform ways, or together with light local snowfalls. On the 14th it dispersed over the North West State. No. 5 to safest were defined in Northern Alberta on the 14th, it afterwards travelled shortly over the Teau tories and Manipola party. Lake Region and thence to the Lower St. Lawrence Valley. It was accompanied by a continuance of mild weather from the Rockies to Manitoba, and it brought a change to deal bely million we observe from the Lakes to the Atlantic. During its presence there were also light falls of short or rain in nearly of places. No howes a very moderate depression which appeared over Texas on the 14th, and offerwards travelled over the Guif of Mexic. to the United States Atlantic scaboard and eventually dispersed in air the Convention Const. No. 7 was apparently a severe storm off our Atlantic Coast - During the 19th rate disturbed a claused the N var Society Coast, heavy rain falling in the Maritime Provinces, and at 8 pm, the parentee of 28, may was realling 28,000 inches reduced to sea level. No. 8 was seemingly subsidiary to No. 5. It was contored in Noethern Atlanta on the morning of the 19th, and afterwards travelled eastward to the north and of Lake Superior, it was attended by a continuance of the mild weather and local showers which had electrorized No. 5. No. 9 formed in the West South-West States on the 21st, the pressure at that time being generally low. By the night it had become a well developed area centred in the Onio Valley. It if an traversed the St. Lawreese Valley with increasing energy, and westerly and morth westerly gales were generated throughout Eastern Canada on the 24th and 25th: No. 10 was centred on the morning of the 25th in New Mexico as a depression of importance. It was probably the outcome of the goale sing of two or more minor areas, It travelled north-east to Like Superior and thence with aminishing energy to the Gulf of St. Lawrence. It caused a fall of rain in the Lake Region, snow pur rain in the St. Lawrence Valley, and rain with moderate gales in the Maritime Provinces. No. 11 was an area with 'a good with great gapdity, On the night of the 26th it was off the British Columbia Coast, and toy the citizen noming of March 1st had reached the Gulf of St. Lawrence. In the Lake Region it was lobed like a fittle depression from the Noethwest. It caused light falls of rain or sleet from the Lake to the Atlantic, except in the Georgian Bay Region where the precipitation was snow, and where the fide in many above, was sensionable

### WINDS

The distribution of pre-streamentioned under water thospheric pressure linds, the radical fed by cometric gradient for westerly winds throughout Carada, and the table of wind directions show this order of each the case. In the North-west Territories the westerly direction was experient door uninsteen days. In Mantobrand Omario on twenty-three days; in the St. Lawrence Valley on seventeen days, and in the Maritime Provinces on twenty-one days.

In the Territories and Manitoba the force of a gale was revolved on three days and fresh to strong winds frequently prevailed. In the Lake Region there were three gales, twolve days of strong breezes and four days of fresh winds. In the St. Lawrence Valley, more especially in the eastern portion, many days of strong breezes were experienced and the force of a gale was reached five times. In the Maritime Provinces gales occurred on the 7th 13th, 22nd and 26th i on the 19th day there was a gale along the Cape Breton Coast. The heaviest gale was that which prevailed on the 5th. In the latter Provinces where in many localities winter navigation is pursued the gales of the 7th, 12th and 25th were analyy warned, but in the case of the one of the 22nd the signals were lowered too soon, in fact at most places before the gale had set in, this was owing to a quick steepening of the barometric gradient over the Maritime Provinces after the depression had passed out to sea.

### TEMPERATURE.

Temperature was below average in all portions of Canada, except along the St. Lawrence Vailey, between Montreal and Father Point, where it was from average to one degree above. From the coast line of British Columbia to the Lake Region, the amount below average was very considerable, and this was especially the case over Southern Alberta and also in Assinibola, where the deficiency was as much as from 9 to 12.

British Columbia,	66 ,0 on 19th at Quesnelle.	<ul> <li>39 on 3rd at Midway and on 4th at Donald.</li> </ul>
North-West Territories.	59.0 on 19th at Red D.cr.	52 0 on 11th at Kneehill.
Manitoba,	41.0 on 26th at Russell.	[62] 0 on 9th at Emerson.
Ontario.	55 .0 on 26th at Cottam, S cruis and on § 27th at Windsor.	55 29 on 10th at Savanne.
Quebec,	44.0 on 18th at Brome.	14 0 on 8th at Chicoutini.
New Brunswick,	47 .5 on 21st at Moneton.	15 36 on 5th at Sussex.
Nova Scotia,	49 .0 on 21st at Halifax.	15 .0 on 2nd at Truro.
Prince Edward Island,	43 .2 on 21st at Charlottetown.	7 .0 on 11th at Hamilton.

### PRECIPITATION

Victoria reports precipitation 1.3 inches above the average; the average was also exceeded over the Lower Mainland of British Columbia, but elsewhere throughout the Dominion, if we neglect an excess of 0.5 inches at Medicine Hat, and 0.2 inches at White River, precipitation was nearly everywhere below average. In the Ottawa and the Upper St. Lawrence Valleys the deficiency was from 1.3 inches to 1.4 inches, and in the south western portions of the Lower Lake Region and the Maritime Provinces, it was below to about the same amount. In several parts of the North-West Territories no measurable amount of precipitation occurred.

From Quebec City to the Island of Anticosti there was from 24 to 36 inches of snow on the ground at the end of the month; this was considerably more than there was at the end of January. On the other hand, the amount on the ground in the Georgian Bry Region had on the whole, greatly diminished since the end of January; Parry Sound reporting 28 inches against 56 inches, and Owen Sound, 13 inches against 27 inches; however, in the Muskoka Lake District the amount was 32 against 37 inches last month. White River reported 27 inches on the ground, and Rockliffe 20 inches. Qu Appelle 20 inches, and Minnedosa 24 inches. In Alberta, as well as over the southern portions of the Lower Lake Region and the Maritime Provinces, there was none or only a very little.

### THICKNESS OF ICE.

North-West Territories and Manifora.—Edmonton, 28 inches: Battleford, 24 inches: Medicine Hat and Swift Current, 30 inches: Minnedosu, 24 inches: Pembina Crossing, 23 metres.

ONTAIRO. Port Arthur, 30 inches. Parry Sound, 23 inches, an increase of 8 inches since January; Southampton, 24 inches, an increase of 10 inches; Kungston, 18 inches. Rockliffe, 20 inches. Paris, 12 inches; Orillia, 21 inches; Midland. 27 inches; Stratford, 26 inches; Barrac, 26 inches, an increase of 11 inches; Stony Creek, 20 inches; Port Dover, 21 inches; Wilarton, 20 inches. No th Bruce, 18 inches.

MARITIME PROVINCES. Chatham, 18 inches. Yarmouth, 10 inches. Sydney, 30 inches. Charlottetown, 13 inches; Halifax, 18 inches

### BRIGHT SUNSHINE.

In British Columbia the dameter of the possible amount of bright sunshine varied from average to slightly below, but in all other parts of the Dominion the average amount was exceeded the greatest general amount above occurring in the North-West Territories, Manitoba and in Ontario.

TEMPERATURE RECORDED AT DAWSON YUKON DISTRICT DURING FEBRUARY.

Day.	Mac.	VI 121		10.00	M.e.	Mm.
1	2.2	5.9	15		1.0	3.2
2	1.2	16.6	16.		15.2	25 2
1	i (i	\$ 4)	17.		21.0	- 40.9
4	6.0	() ~	18.		0.1	22.7
i)	6.0	11.11	19.		9.0	15/2
ti	0.1	150	20.		13.8	37 0
7	1.4	26 6	21.		16.5	11.1
8	1 ()	222	-1-1		11.0	37 6
.1	11.0	32.4	23		5.0	30 6
10	7.0	32.4	24.		2.5	25 6
11	7.0	7 4	27.		2.3	21.2
12	7 61	1.5	26		6 16	18 7
19	7.4	0.7	27		11.7	27:9
14	1.3	(1.1)	.5~		12 ×	- 25 6
					2.3	19. 6

Mean for Month, 1000.

It will be interesting to notice with regard to the comparitively maid winter prevailing in the Yukon Territory that at nearly all the stations reporting from the North-west Territories and Manitoba during February, a considerably lower temperature was registered, and that at Russell, in Northern Manitoba, a lower average temperature occurred. The same fact is observable at station to the north of Lake Superior, and even in the Parry Sound district a lower temperature was registered than at Dawson during February.

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, FEBRUARY, 1899.

\* Stations not furnished with Registering Thermometers. a Barometer not reduced to Sea Level

•	· Pays with OI or Xu, of Pair days   Xo, of Auroras, Xo, of Thunders   Xo, of Fogs,	1/1 1000000 0 0 0 00000000 000 0 0 0 0 0	7007 71577 777 7787 778 7787 7787 7787
Раеспетатюм.	Amount.  Difference from Average.  Heaviest fall dinom in	RADIRAGUA - A RUSA LIVANYBARA ROT INSELT BAR RADIRAGUA - A RUSA LIVANYBARA ROT INGELIN BAR RADIRAGUA - A RUSA RADIRAGUA - A RUS	2.2.2.1
	-ib bate and di- morf notices		**************************************
Y OF W	Highest day's		masabot a i
Velocity of Wind.	Mean miles The bour.		. /: t- 110
	lotal number of hours.	- 現代表別を開き出ている。 アース・スーム	Esgin - G
× ×	5)	· Paristin in in Pin ·	- 144E, 11, 11E + 3 - 14EE, 11, 11E + 3
DIRECTION OF WIND FROM	w. X. w.		(무용무리 'QAA E E I
Wini	s' <i>II</i> .		155 5 ST (FT )
5 2	's	### <b>8</b>	
CTIO	s. E.	Committee of the state of the s	= 1 :
DIR	E		
	X' E'		
	.7.		
ubje-	Zo. of days col	- 유무의 형ː[ːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːːː	
10 1	Меан а тоип		( )
-nH	Mean relative	· · · · · · · · · · · · · · · · · · ·	
to et	Mean temperati	<ul><li>富計等等の発生して発展される。</li></ul>	
	Mean daily range.	* AND THE CONTROL OF	84557 414 10551 E247 414 10521
	- Date.	i de la companya del companya de la companya del companya de la co	EA / / / / E
2	,189700.Ĭ	· 보위 아마리아라 [He let ]은 다른트로프로토리아 [우리아] 한다네스스스 (R. 다른만	92214147444
ATUB	.93£ <sup>[]</sup>	T akabamba (4.4 b kambababa ana jadahba 4.45)	77757-55777BE
Темреватовк	Highest.	- 하이스스(영화에 1세 14 14 15 10 스크리아스(오리 리스에 크리스(오리 리스 크리스) - 경임부경쟁(安藤文 로 또 또 경 프로그램(자리스) 최고 (국제 경역자용의 시 제 2004 - 기계 (공원화하기 대 기 기 기급 (국제 기업	17 1 2 2 7 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Ę	from average, Years observe.	Travegalali no so tementaria anti a un ella ella ella ella ella ella ella ell	7/5/5-1/5-5/5-5
	- Parenetti I		37 = 1 = 7 = 7 = 7 = 1 37 = 1 = 7
	Левп.	े भ्रमेत्रेस्ट्रहरू । जि. जि. जि. जि. जि. जि. सम्बर्धाः स्थाने विश्वस्थाः स्थाने स्थाने स्थाने स्थाने स्थाने स	risitatesines significant
	Range.	- 超月老目目目透明	5555787 ·
RE.	Lowest.	ិញ្ញាស្តីក្រុម ធ្វើការកាធិ្សីក្រុម ការខិត ការប្រ	2327686 : ::
Риквзуик.	Highest.		XEEXNET . : - : : :
Pin	Mean reduced.		
тәұ	Elevation above		공속통통합으로 1번 중요소
-	Longitude W.	- pondánadysse podebásakanská projeka sa podebáská projeka p - podásadí 2006-banda projeka p	82685212822 82685212822 8268521282
	Latitude X.	<ul> <li>*** *********************************</li></ul>	
	STATION.	intran Colomas.  Vactoria Isa Kery III.  Katerskin Kater	A. W. Transcrours: Medicane Hart Edward Carrori Out Apollo Callet Out Primer Whart Callet Out Calle

2212

STATIONS IN THE DOMINION OF CANADA, FEBRUARY, 1899 \*>tations not farnished with Registering Thermometers.  $\Lambda T$ PRESSURE, TEMPERATURE, VIND AND PRECIPITATION a. Barometer not roduced to Sea Lovel.

'sāoM To .oM l --------------surfore bund To .o.X.] ---. . . . . . . . . . ....... , surround, to  $\omega X$ 45 svib and to lox foreswith of or more, 228 296 496 Heaviest fall in 171 HITTATION. tion yremse. 797 286 ā87. 東昌東方 372167813 876 .69 35.8 ŝ -ib bun abid moth motion  $\geq$ 1286 : E Highest day's releasity. VELOUITY Mean miles per Total number 7 varat gggaadat 7871:: 661: agege (graggeere === ٠, :약폴의적인도록 : Z'R'PERCTION OF WIND PROM 11.\* : 도망하고 [왕호] a. V 고양원 [ .11.8 -<u>22</u>5 :<u>2</u>020003<u></u> ٠.۶ Louise (Todo-cia S "HIS [#8<u>Z</u>H9=6**=** Ε.  $X^*E$ t-t-== Zo, of days complete-by clouded, 1 : 1 Menn amount of Mean relative Huuniodwad To exurcisquiet meak 125 E-121091 E-12111 S298 sausi \$15 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 500 | 15 5 1113888558219888 Mean dails 122222222221-22E Dane - - -777 1777 = = - = \$ <del>4</del> 7 5 5565 777777 14494997449997997 Townst. #355F TEMPERATURE.  $\operatorname{Deter}$ 000 229 200 50000 5457 0/00007 XA46498 0000000 184444 당도다 X = 23 2 = 25 1 = 25 2 [1]] 11121 11121 11222 ашыыды 5-1-1 75017500 75017500 Mean111 11 982 59 Ta 28 JB 1 60 залини E558 Towest. PRESSURE 58 177466 8888 Highest. Z=6 Mean re hierd. Elevation alove for 夏日日 衛星日日日日日 11185858111111 271 885 1758 2 287 887 222 3 223 887 222 3 115 BRINGER BRINGER BRINGER BRINGER Louerfule W. A shunned 8911122222222 Alametra Ala Haberberg Haberberg Sa Barre Sa Barre Sa Barre Sa Barre Sa Barre Sa Barre Sa Barre Barre Sa Barre Barre Sa Barre B A.W. Learthous S=(5), fadian Head, Cambington Manor Machod Marcow Gatescarth Pmcher Creek Grentell Vacedull n-rowpeting ort Sunp-on.

00444800: 0004040		00000000000000000000000000000000000000	00000	notHoo: 0
110011000H 0000HH0	00/400000	845445000000000000000000000000000000000	000400	200222 : :
821-13203 821-13203 831-1321 831-1321 831-1321	515F38+5 51588385	######################################	<u> 445</u> 644 02000	를 통료 유명 등
55555555555555555555555555555555555555	184488498	######################################	\$255E	8 (89 (89 ) 18
58888885 : #454488	_   F	[88828828274] - 4222284	7.8888 E	8 22 5 12 12 11 11 11 11 11 11 11 11 11 11 11
77°97777 : 777779°	1 772277 17 172284384	######################################	177777 : -AGT97 :	
<b>N</b> N-1		HHCODOSCHHNHHNNHCHNHOH		9 154 153 1 H 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
26 38 E 27 3 W 175 8 W		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1111111	* : 2 % :
				5 95 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
i lete i i i i i i i i i i i i i i i i i i	1178   11 <b>7</b>   1	#		
				Z 2 5 5
\$ :\$24£5	75:37	19 1 255 17 177 17 17 17 17		₹  ₹₹₹₹₹₹₹   T : : : :
ชู : ๑๐๑ ซุม : 💍 : ๑ : ๑			- T 11 H 1.	
6 :6001860 : 12 : 14 : x	H			8 [786587]8 : [ ] :
6 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3			F .F.H	및 로컬스립뉴(Paramana)
13 20 20 20 20 20 20 20 20 20 20	: 25 m : 1 m		t i i i i i i i i i i i i i i i i i i i	
ආ ්දු කි. ක්. ක්. ක්. ක්. ක්. ක්. ක්. ක්. ක්. ක්	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
	1118 11-01			* ************************************
	: [ <sup>m</sup> 2 ] ]			
2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	[] 라마티 크림 []로얄리티티드 리티	스 트를 보고 모르는 를 모든 등 등을 받는다. 전 대한 전략이 불로 취임 등 기업을 보고 있다.	. 24	
	::			
ю <u>эн юйгий гий гий гий гий гий гий гий гий гий</u>	: :::: 			
9	: :::::::::::::::::::::::::::::::::::::			
the state of the s				
ုန္ကာ မြာလေသမာ (လမ္းမေး) (လ	molocuencue 11 Elitable	STOREGRAPH STORESTERN STRUCTURE TO THE STRUCTURE STRUCTU	iditirid ≓naxaa	ariiriii ii ii ii ii
86 24222 77544 8	200000000000000000000000000000000000000	98553485 949995995 4999 	245889	BBSEAS
			: 	Andricado do 11 11.
802548524 - 124441444		#5555555555555555555555555555555555555		<b>音节音音音音音</b>
ଗ୍ରଷ୍ଟିଷ୍ଟିଷ୍ଟିଷ୍ଟିଷ୍ଟିଷ୍ଟିଷ୍ଟିଷ୍ଟିଷ୍ଟିଷ୍ଟି	@2000000000000000000000000000000000000	######################################	គតិតីអ័តិ ខេត្តខេត	HAAAANEE E ::::::
82822888 - 02023822 94488843 - 02023822 94488843 - 02023822	1772284494 21729 <u>12</u> 2	20072530442400900000001400 400724446826700000000000000000000000000000000000	80000000000000000000000000000000000000	994985555 8
	0 +: 15 + 200 0 + 1 + 0	**************************************	1000 E X 200	nnonxem-le :
0.000 - 4-4-1-0 - 10.000 0 0 0 0 1 - 1		さいことがない こうしゅう コースカット くんりゅうしょう	20 X 2 81 2 t -	
#558####   6#5######		F3353xxxxXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	222/24	E=227=22   2   1   1   1   1   1   1   1   1
355			: : : :	8 1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
\$5.55 \$5.55 \$5.55 \$5.55	97 68	등 : : : : : : : : : : : : : : : : : : :		
888 8877 77	. 6 : 8 : 1	경 : : 경영 공 : : 공공 : : : : : : : : : : : : : : :		13 : 13 : 14 : 1 : 1 : 1 : 1
888 : : : : : : : : : : : : : : : : : :	. 3 1 13 1	물 : : : 물통 : :		# 1   R 1   R 1   1   1   1   1   1   1
598 588 588 588 588 588 588 588 588 588		8 1 188 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	[11] 11] [영화 구설 :	8 1 8 18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
564562242282255 in 1		현 : [ [해당 [ : [ ] 2 ] 2 ] 2 ] 1 : [ 중 ] 1 : [ 중 ] 1 : [ 화면장윤학원학중앙학회의학위원하스스에 1933	18 : : 88 : ==143 :	
\$	Z NANESESSES	\$		8784948486788844 87849486868884 8784948888884 87849888888884 878498888888884 878498888888884 87849888888884 878498888888888
<b>\$9</b> \$	2012 <b>3112331</b> 231	후유역으로목욕욕으로관리를부모모두목부리분드목록 프림돔~동리노후도등등록	28255 20255	######################################
WAMDO: -(ba. Greenburst. Haliburin. Paint Christian Pour Christian Burban	Contestings Stony Treek Toronto Welland Welland Peterborough Deservanto Bakefield Filderfown	Mingston (Jonatari (Jonata		Montteel Echanool Brome Quebee Chicottee Point Fuller
St. Kr. Kr. Line 1. Li	H 4			
Aano, (vo. aliburate aliburate aliburate reaning reaning ref Samily	Ogo.	A SECTION OF THE SECT	op	in i
wanno - (va. Hailburton - Hailb	Contesting, Stay Creek Toront Welland Nigama Peterboragh Lindsay Deservation Lankefield	Mingston  Montard  Routew  Routew  Feedliff  Feedliff  Corrier  Corrier  Stonifylle  Millione  Million  Corrier  Millione  Corrier  Millione  Mill	Port Hope Fort Hope Kithmondt Cockburn Island Charlean Fickering	Montteel Drone Drone Quebee Chrowthin Fighter Point Four des Monts Cope Charte Four des Monts Cope Charte Grade Charte Grade Charte Grade Charte Antresta, N. P. Antresta, S.W. P. Antresta, S.W. P. Four des
Σల¤೯ฅ∆∆≱∆∆ವಹಪಪಪಪವೆಗೆ ಸೆ.್	oze <b>snaj</b> a	Mingston  Johntard  Rothew  Rothew  Rothew  Gunden  Gunden  Stonding  Stonding  Multima  Multima  Stonding  Multima  Mul	=433024 8	arassattriris aszíg

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, FERRUARY, 1899.

"Barmeters of behavior to be a closed. Stations not manifold with Registering Thermometers."

1		No of Fogs	=	:: -: -:			C = ·=	=
	some.	Yo of Auroras   Yo of Thund, st	°			=	== =	=
		Zo of Earr days	- 19	244858 488 465478 565	2 12 E E E E E E E E E E E E E E E E E E	- 3	25 S	7
	alom.	To 10 diversity of or	2 . 2	identification of the	おきジマギュルタ ・ ニュ	2 9	7.6 8	=
	Non	ni Het terivord		E50Z54.5.3	50007 00 : 5 50007 00 : 5	= -	25 . 3	-03110JET
	FITA	Difference exerave mort	≟ ; 1	99997777	77577 75		77: 7	Î
	PREUTITALION	Amount.	± - =	유무수용보통 등관점 ************************************	TV658 88 1 4	, , , , , , , , , , , , , , , , , , ,	5	6) <del>†</del>
		mort noit	::	=====::			* * . * .	×
ĺ	=	Patte and direc		SS4585	\$255 \$255 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$1	71	61-	13 s w
	TY	Lelocity Highest day's			82862	E - 1	81 N	ž.
	VELOUITY OF WIND	your miles ber	- ! !	5 EE-		†1 : 7	12	:
	_	sanou io	- 13	ज्ञात्वसम्बद्धाः । ह	88787 FF 1:5	G :6	87   7	æ
-		Lotel number	=	#29=2m   P	Again Installs	£ :=	== : =	4
	N	7.11.	1=	gressel im	第10号名 1.8 12 ·	2 2	원왕 : 프	1
. 15	o Fla	11.	7.	525165 /	· 有名司《春·日》 日日 日日	2 17	781 - 2	
ome	WIND FROM	2°11.	:	10 EEE : 101	스타함 기계 : 그리고	ā,	÷ ÷ ÷ ;	61
Herm	40.5	8	=		/ = ## = =     /	11: "	e-:-	23
50	DIRECTION OF	31.8	177	10	25780 P	, .	4.53	21
Ster	Pare	Э	:00	(2.7 <del>4.</del> 15 <sup>1</sup> √ 21	福雪等計門由第1000	ā Ē	G 5: 11	-
MILL REE		Z'E'	1.0		48249 11' 11' 11' 1	-	F-: =	10
			-	nerent in	68759 HT HR	A 11	12.24 81	10
Stie	Ze of days completes				and Branch in Fig.	45.	× =	C3
arm	to tanoma and to				andre III : III	ug.	1-0	,*
Stations not a	- n H satisfact H u -			a 11 a 11 1				÷
	10 -041	Mean temperate by the pentil.		2111 :11			i	
		ylean dady	7 : 15 12 15	79EEE 12E6		= ==	G 2     G 2	15 9 6
į.		.atet	1.75		#==x=;==;;==;	\$ [5]	:	-
80 T 16	ii ii	Lonest,	· [#]				7	13
ΞĮ		tatnet.	- 55	201-01-1 045-	54554 (86 ) (6 ) (	5 48	#8: 5	91
reduced	WPERVIO	1 Highest	, ==	CHESSE SIND	55555 55 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1	E EE	98 B	19
not re	Ē	Tagasto attort	- E	5151-5155 1-110-5-11-1-1	53545 90 5 55511 95 11 5 11	4 11	6 16 16	(3
ter 2		nour aglitt		11111 111	1	71	11 1	71
rometer		Mean.	> '5	#88421 FA#	NEE#2 [28 ]   18 ] ]	2 12 <b>2</b>	15.0	Ī
r Ba		Impac.	₫:1	#98 (d   - 1   1	9849 HIH HILH	<u> </u>	<u> 3</u> , :	309
	TRI.	.tsvmost.	≡	223 B	2222 5583 1111111111	Ŧ.:	8 ::::	9 8
	PRESSTRL	Highest.	<u>;</u> ; ;	- 구유박 1년 - 11 - 11	2322	11 5 1	₹ · ·	6
	=	Permitted meet	<u> </u>	aaa (a 111) 222 2 388 5	2799 5888	- <del>2</del> + 1 + 1	68	30 15 30
	tos	Flevation above Level in feet.	:8		#### : ### : : : : : : : : : : : : : :	A 11	88 88 : :8	161
				8546761H444 8538888656	89898882898288 954944444948	E854	발크망크용 1	3
	1 1 4-			Ngw Buysspor   1   1   1   1   1   1   1   1   1	NAMA SCOTTA:  SCHOOL SC	22.25 22.25 22.24	###### ####### #######################	29 E
					12 11 14 2 14 2 14 2 1 2 2 2 2 2 2 2 2 2	2525	\$\$555 : : : :	13
			!	In Brissaries: Frod reten Confirm Conf	WANA SOURT Solitor Particular Person Preson	B. Fravier Christietes in	EWI DUNDLAND : St. John's Chumell. Amour Postt	
		Z.	11:	# E H H H H H H				:
		-1 VTP-N		Manual Ma			S S	:
		1	Brien Steller St. Betreet St. Petreet St. St. St. St. St. St. St. St. St. St	New Burnswiff: Frod richn Chatlerin Grand Manau Strand Lepreux Pour Le	Nova Scotta: Switter Switter Transport Transport Poten Poten Poten Transport	E. INNOCOMORPO	John Charles of No.	ввиста: Ргоярест
	,		[ Ball	a de de la	Mona Souta Boldax Sydney Formouth Porton Drain Will Hasting Will Charles South Gloud, E. P. Cascherouth Cascherouth Monatology Monatology Monatology	P. E. Iseans Charletteten Georgedown Summers le Hamilton	Newtoundands St. John's Channell Channell - Capanell - Amour Papt	ввиста: ВРгоярест
						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	4	Н

# PRECIPITATION AT STATIONS REPORTING RAIN, SNOW AND WEATHER, DURING FEBRUARY, 1899.

										= =
			Rain.				83	COW.		
STATIONS.	Amount inches.	Days Of or Over.	No. of Fair Days.	Heaviest Fall in Month.	Date.	Am out in inches.	No. of Days.	Heaviest Fall in Month.	Dies.	Remark4.
British Columbia— Nananno	3 28		18	0.90	25	110	9	9.0		
Beaver Creek Langley	5.96	12 12	12	1 I1 1 38	26 13	9.5 7.5	5	4 0 5 0	- E	
Royal Oak Goldstream Lake	4 (17	14	11	1 10	297	13.0	2	7.0	- 1	
Salt Spring Island	8 54 3 45	12 11	13 14	1 68 1 10	26	13 5 11 7	4 3	30.7	-	
Cumberland	3 05	8	15	0.78	14	13 5	5	7.5	ń	
North-west Territories— West Beaver Hills	0.03	1	21	0.03	14	2.6	Ď	1.0	,	100% 48
Макітова—						1.5				
Morden						1.5	3	1.0	12	
Norquay						4 0	5	1.5	26	5th 45, 10h-45, 10th-45,
Shoal Lake	. 16				0					10th 42 . 6t) (0)
Norquay Gretna Shoal Lake Pilot Mound Pembina Crossing						2 0	1	1 +1	14	6th 47, 7th 52, 8th 58, 8n w on level 15 m.
ONTARIO-		1	24	0.10	25	4.5	.3	2.0	3	Time! I.
Ennismore Roblin's Mills Huntsville	11 28	3	25	0.10	28					10th 18 19th sleighing all gone.
Huntsville	0 65	5	21 19	0 45	26	9.0	5	2.5	23	119, 28 , 12th, 28
Arden		4	20	0.43	23 27	11 0	_	3.0	1111	11th 98 1964 500
Kitley	1 10	4 5	19	0.45	27	2.5	10	3 0	9	1261, 25 . 11th 14 .
Scarboro Watford Dutton Dealtown Oliver's Ferry Washin	1 80	3		0.02	23(	-				11/11/14.
Dutton Dealtown	1 52	4	22	0.74	21	1 ()	2 3	2.0	3	11tn 15.
Oliver's Ferry	0.25	1	25	0.25		<u>-</u> 0	- 3	5.0	22	10th 11.
Wooler	1 25 0 28	5 4	20	0 47	35 15	5.0	5	1.0	3	12th 24.
Moptague	0.25	1	24	0.25	27	100		2.0	Ž	10ri. 25 . 11th 20 .
Aurora	1.71	3 5	16	0.35	25	÷ 6	- 19	220	22	.ch-21 .1oth-16 .1_th-20 .13th-
Princeton. Wiarton	1.00		17	0.70	26	18.0	5	6.0		361 26 : 11th 32 : 12th-34
Thompson	0 25	1	22	B 0 25	15	4.5	1	2.0	27	20ch a terrible wind storm.
Warrow Lake Thompson Ursa Parma. Croyden Lansdowne Georgetown	0.36	. 3	23 21	0.32		16.0	5 3	5.0	.2 ~	
Croydon	0.35		22	0.60	27	7.0	1 4	3.0	4	125. 20
Lansdowne	0.93	21217	23 15	11 45	26	3.5	3	2.0		
Orangeville	0 ~1		16	0.25	200	10 3 17 0	9 12	1 5	29 22 25	
Orangeville Goderich Providence Bay	0 63	200	23 16	0.00	26 27	27 0	. 3	1.0	25	
Emsdale	0.25	1	21	0.29	26	14.0	10	12 0	2	
Emsdale Cherry Valley	0.45	3	24	0.20	26 27	1.0	1	1.0	3.9	
Sunshme Lion's Head	0.26	1	1.4	0 26	26	2.0	6	1.0	19	Stir 20 . 26th, first thunder of year
Jermyn			26 24	1 20	27	5 0	2 3	4 ()	20	
Elgin Wyoming	1 65	->	260	1.30	245	. 7 ()		5.0	3	11th 16 , 12th 16 .
Hubrey	0.70	2	24	0.70	27	~	2			
New Brunswick— Point Escummae						1.5	5	0.5	9	
Nova Scotia— Port Morien	0.45	2	20	0.45	25	15.0	6	6.0	14	
P. E. ISLAND— Port Hill	0.40	1	21	0.40	27	27 0	7	12 0	14	

Aurora recorded --

Where the class of an \*\(\text{ca}\) is noted by the observer, it is given, (I) being the brightest, (IV) the deblest in brilliancy.

- I. Pembina crossing, IV: Aweme, IV. Savanne.
- 2. Pembina crossing, IV; Belmont, Treherne. Aweme, H; Red Deer, IV; Duck Lake, IV.
- 3. Russell, IV. Buttleford, IV; Pembina Crossing, III.
- 5. Russell, IV. Pembina Crossing, IV; Clontarf, IV; Red Deer, IV
- 7. W. Beaver Hills IV. Savanne. Owen Sound.
- 8. Russell, IV Toronto, IV; Pembina Crossing, II; Belmont, Georgetown, IV; Aweme, III. Regina IV; Savanne, Muscowpetung, II.
  - 9. Russell, III; Minnedosa, III; Pembina Crossing, IV; Belmont, Regina, IV; Savanne, Moose Jaw.
- 10. Minnedosa, IV. Battleford, IV. Pembina Crossing, IV. Regina, III; Savanne, Muscowpetung, L. Calvin I: Moose Jaw.
- 11. Truro, IV; Russell, H; Gravenhurst, IH; Coldwater, IV; Toronto, IH; Fredericton, IV; Charlottetown, IV; Kingston, IH; Quebec, IH; Battleford, II; Pembina Crossing, IV; Belmont, Huntsville, II; Midland, II; Georgetown, IV; Treherne, Aweme, II; St. Stephen, I; Regina, IH; Erasmus, Bancroft, II; Clontarf, IV; Cottam, Birnam, IV; Stony Creek, IV; Port Dover, Welland, IV; Savanne, Tagish, Canning ton, Manor, IH; Gatesgarth, Duck Lake, III.
- 12. Russell, H., Gravenhurst, IV: Toronto, IV: Fredericton, IV: Banff, III: Quebec, III. Minnedosa, Swift Current, White River, II: Ottawa, II: Pilot Mound, I: Midland, II: Georgetown, IV: Perce, IV: Alton, III, Cockburn Island, Clontarf, III: Birman, III: Stony Creek, III: Bognor, III: Savánne, Red Deer, Duck Lake, III. Calvin II: Moose Jaw. Barrie.
  - 13. Toronto, IV; W. Beaver Hills, 11; Huntsville, I; Bognor, I. Moose Jaw,
  - 14. Russell, H; Montreal, IV; Treherne, Aweme IV.
  - 15. Pembina Crossing, IV: Muscowpetung.
  - 16. Medicine Hat, HI: Awene, HI
  - 17. Pilot Mound, H1.
  - 18. Richmond.
  - 20. Pembina Crossing, 4V., Pilot Mound, H.; Tagish, H.; Cannington Manor, H.; Duck Lake, IV.
  - 21. Pilot Mound, H. Regina, HI.
  - 22. Savanne.
  - 23. Russell, III Toronto, IV; Kingston, III. Savanne.
  - 24. Toronto, IV
  - 25. Aweme, HI. Rod Deer, H.: Duck Lake, iV
  - 26. Russell, IV.
- Russell, I; Queeze, III; Pembina Crossing, II; Huntsville, Georgetown, IV; Treherne, Regina, II Lucknow, Savanne, Red Deer, IV; Cannington Manor, Muscowpetung.
  - 28. Russell, IV Prepre Albert, H.: Pilot Mound, III.

	ENDING

	5 a.m.	1.70.	_													
		, di	Ē	æ E	9 A.M.	: <u>1</u>	H = m	Ž.	H-d-	E d	in a bring	1 Peril:	made.		- 1 L III	S p.m.
Esquimalt				0.02	0.15	0.23	0.20	0.27	(1.25)	11 - 121	1.28	0.21	() 13×			
Kuper Island				`	0.12	0.20	0.27	0 ,15	0.39	0.34	17 - 41+	0.765	1.10	~		
Agassiz, B.C.				s <sub>2</sub> (3)	0.03	11.	0 22	0.20	0.23	0.26	0.29	0-21	0.00			
Battleford			0.35	6.52	0.73	6.73	0.78	() = h	0 -1	0.75	0.71	0.29	0.01			
Indian Head				0 (6	6.30	0.70	() <del>,</del> <u>;</u> <u>;</u>	0.74	0.71	FI FC	0.50	0 20	11-11-2			
Brandon			_	0.30	f) (;~c	0.62	() (31)	0.7	0.77	0.74	11-15	0.54	n <u>2</u> 0			
Winnipeg				0-10	0.21	si 44	0.61	0.06	11-64	0.04	0.00	0.50	0.12			
Durham				H 116	0.36	0.30	0.33	0.35	0.34	0.33	0.34	(1 22)	0.15			
Woodstock				0.00	0.74	0.37	() *31	0.54	11.5.	11 (11)	0 11	+ 44	0-15			
Toronto				0.56	0.45	0.55	0.66	0.64	0.03	0.51	(1.56	0.55	0.31	$\alpha \rightarrow \lambda$		
Lindsay				n ;o	0 33	0.40	11 (34)	0.61	0.55	0.00	0.50	0.47	0.37	0.17		
Barrie				u ;5	u 10	0.49	n 5	0.56	0.57	47 - \$1.1	9.59	0.45	0.15	.~		
Kingston			0.00	0.27	() i	0.77	0.50	0.59	0.61	(1 5.5)	0.57	0.43	0.20	0.04		
Ottawa				0.11	0.24	0.29	0.34	11 47	() - ()	11 50	0.55	0.41	0.15			
Montreal				0.15	+- 41	0.53	0.47	0.54	0.54	0.55	0.57	() <u>-</u> 1()	() O7			
Fredericton			0.15	0 430	0.50	(r = 5)	() GI	+ ;; ;	0.61	0.55	н 53	0.32	0.00			
_ ·	Esquinialt.	Kuper 1-land.	Aga stz.	Battly boad,	Indom Head.	Brandon	Winnipog.	Durhom	Woodstock.	Consulto,	and ay.	Ватие,	king ton.	Mawa.	Montread.	Fredericton

### FORECASTS.

The forecasts issued by this office at 11 p. m. each night are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 859. These were divided as follows:—

	,	Verified.					
Instrict.	No. Issued.	No. Fully	No. Partly	No. Not	Percentage		
Manitoba	84	73	5	4	92 3		
Lake Superior	88	733	6	9	86:4		
Lower Lake Region	97	78	13	6	87 1		
Georgian Bay	96	79	12	5	88-5		
Ottawa Valley	91	78	9	4	90:7		
Upper St. Lawrence	91	76	11	1	89:5		
Lower St. Lawrence	97	83	10	4	90.7		
Gulf	104	91	8	5	91-3		
Maritine Provinces	111	92	10	9	87:4		
Total	859	725	84	50	89:8		

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

The storm warnings and forecasts for February were issued by Forecast Official B. C. Webber.

### PHENOLOGICAL OBSERVATIONS. F. F. PAYNL

It would appear from the few observations of phenological phenomena and the desultory manner in which they are recorded by meteorological observers that their value is not fully appreciated—or is not properly understood. Taking this for granted it may well to make a few suggestions in the hope that at least a tew observers will add to their observations notes upon these phenomena. Taking this for granted it may be

It is well known that to a large portion of any intelligent community meteorological averages or other data expressed in figures are of little value as a means of convexing information. On the other hand if, in describing the climate of a district, the same people are informed of the date when certain well known plants bloom or other seasonal changes take place a picture of the climatic conditions is formed at once in the rands. This being the case and as a very important branch of the networologists duty is to convey information of these conditions the usefulness of phenological elses vertices should be duly recognized.

In a small district it would be better to singuists for elses reason meeting with well-known phenomena, but where the area to be covered is

large as in Canada only general suggestions can be made.

Accuracy in identifying the object observed is all important, therefore it is far befor to confine the observations to phenomena well Accuracy in definiting the object observed is all important, therefore it is far better to combe the observer, remembering that a note of the date of blooming of a little known plant or the arrival of a race I off is usually of less value than notes upon common species. Observations also of sports out of serson, which are due to quite local conditions, while interesting, are of bittle value and should not be recorded everyting in parenthesis. As one swallow does not make a summer neither does the appearance of any other single species of bard or plant indicate fairly the serson, in vertibeless these may be noted with a remark that they are the only ones seen.

The following is a list of phenomena which might be observed together with remarks:

BOYNY. Dates of leding or flowering or fruiting or defoliation of plants and trees k, k leaves fully expanded; buds quite formed; thowers turned upward and stame is visible; fruit or seeds ripe; heaves falling or withered. One or all of these changes might be noted. Wild plants and trees should usually be chosen for observation in perference to cultivated ones; this however does not apply to agriculture, observations of which are very important. In recording the changes in vegetation as far as possible the same trees or plants should be made recall the observations should be made in the same locality.

ORYTHOLOGY. Dates when birds are first seen, when numerous and when last seen, also migration of birds which usually occur upon still mights when, although the species may not be known by their note, they may often be distinctly heard, and this fact is well worth noting. The date of in-sting might also be noted. Birds will often be found in a certain locality year after year much callier than in the surrounding country, and if this occurs a remark to that effect should be noted against the hird observed.

ENTONIOTOGA. Dates when several of the same insect are first seen and when it becomes common. The larvae of butterflies often enter buildings to undergo transformation and are there hable to develop earlier than those out of doors; in such cases it is not advisable to enter them. It is especially desirable to note the white Cabbage Butterfly, Cock-Chafer, Lee and Mosquito.

MISCHEANED S.—Dates of ploughing, sowing, harvesting, floods, opening and closing of rivers and lakes, thickness of ice, froge piping, first earth worms in Spring indicating that frost is out of the ground, &c., &c.

R. F. STUPART. Director.

METEOROLOGICAL OFFICE, Toronto, March 27th 1899

### METEOROLOGICAL SERVICE, DOMINION OF CANADA.

# Monthly Weither Recient.

VOL. XXIII

MARCH, 1899.

No. 3

### INTRODUCTION

In compiling the present Review the principal data made use of are the telegraph reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

### REMARKS ON THE WEATHER.

The weather in Canada during March was unusually cold and although it moderated somewhat on the last few days of the month there was little sign of approaching spring. The only exception to these conditions was in British Columbia where in many districts the temperature was average or rather above, and at a few points quite locally in other portions of the country where these latter conditions also prevailed. Added to the low temperature was the exceptional depth of snow at the end of the month, it being greater nearly everywhere than at the end of the preceding month. Similar abnormal conditions were noticeable in the total precipitation, it being above average generally, excepting in British Columbia where it was average in most places or somewhat below.

In British Columbia there was much fine bright weather, and although the temperature fell below the freezing point rather frequently in western districts, and below zero at many places in the eastern portion, the mean was about average. The precipitation which was mostly snow in eastern and rain in western districts was in most places average or rather below. Owing doubtless to the many exceedingly low night temperatures, vegetation was very backward on the last day of the month.

The chief characteristic of the weather in the North-west Territories was the exceedingly low mean temperature it being as much as 18 below average in southern Alberta, this deficiency decreasing to the north and northeastward. The precipitation was somewhat above average and altogether the weather was unusually severe, showing no sign of moderating at the end of the month.

In the Province of Manitoba the weather, though for the most part tine and bright, was exceptionally cold, and although the mean temperature was not so low as in the Territories it was from 8 to 15 below average. The snowfall was rather small, but there was sleighing throughout the month. Some quite severe storms passed over the province and the snow was much drifted.

The weather in Ontario was unusually cold and exceedingly unpleasant throughout the greater part of the month, the signs of spring expected being absent on the last day as on the first. High winds and gales occurred frequently, and added to this exceptional weather were several thunderstorms causing loss of life and some damage to property. The amount of precipitation was above average, show prevailing in northern and rain in southern counties. There was fair sleighing in most districts throughout the greater part of the month.

The cold weather in Ontario also extended to Quebec, where it was equally stormy and unpleasant and there was no sign of approaching spring at the end of the month. The precipitation which was mostly snow was unusually heavy in most districts and at Quebec, the depth on the last day was 11:6 inches, of which a large portion fell during March. The lowest temperatures occurred in most places on or about the 17th - 22:5 and - 22'8 being recorded at Richmond and Chicoutimi respectively.

In New Brunswick the weather conditions were much the same as in Quebec, it being cold and stormy with much snow; and the signs of spring usually present in the latter part of March were altogether absent. Temperature well below zero occurred in many districts up to the 20th, the lowest being 17–0 on the 15th at Chatham. The depth of snow in the woods inland was three feet in many districts, whilst in many places along the shores of the Bay of Fundy it was only a few inches.

The weather in Nova Scotia was chiefly remarkable for the rapid changes which took place, cloud and sunshine following in quick succession during the greater part of the month. Many storms passed over the province and altogether the weather was exceedingly unpleasant although the temperature was not much below average. The precipitation which was mostly rain was above average in most districts.

In Prince Edward Island the weather during the first week was unsarely mild, after which it turned cold and continued so until about the 24th when it moderated and was comparatively mild to the 31st. The storms affecting New Brunswick were also felt in this province but there was more bright sunshine. Altogether the weather did not differ much from normal—F. F. PANNE.

### ATMOSPHERIC PRESSURE.

The mean pressure for the month was slightly below the average in British Columbia and generally above to the amount of about 10 of an inch throughout the North-west and Manitobu. From Lake Superior to eastern Quebec it was slightly below, but in eastern Quebec and the Maritime Provinces the pressure generally exceeded the mean to a slight amount.

### HIGH AREAS.

High areas were numerous and in many cases of large extent; in nearly every instance they first appeared over the North-west or British Columbia, in three cases the movement was south but in all the rest, either east or south-east across the continent.

No. I was centred over Ohio on the morning of the 1st, and was comparatively unimportant. It moved south eastward to the Maritime Provinces, hovered there until the 4th and then moved off the coast. It had first appeared over the North-west on the 27th and was designated as area No. 4 on the February chart. No. 2 was an area of molerate energy which was first shown on the chart over Alberta on the 2nd; it was accompanied by decidedly low temperature and dispersed on the 1th to the north of Lake Superior. No. 3 apparently moved in from the Pacific on the 4th. By the 6th it had spread throughout the North-west and had extended southward to Mexico, accompanied by cold weather everywhere, the cold being extreme in Manitoba and the North-west; it then travelled to the Southerstern States and passed off the Atlantic coast. No. 4 first appeared over the North-west on the 8th and was of little importance there; it thence moved eastward to Lake Superior and then southeastward as a more extensive area over Ontario and the Maritime Provinces, passing off the New England coast on the 10th. No. 5 was an area of small proportions centred over Alberta on the 9th. It moved eastward to Manitoba and by the 13th had become an extensive area spreading from Manitoba to the Atlantic and southward to Florida. It was accompanied generally by fair cold weather throughout its course eastward from the Rocky Mountains and passed off the Nova Scotia coast on the 15th. No. 6, this became an area of some importance over the North west, first appearing there on the 13th, attended by fair cold weather, it passed eastward over Ontario on the 17th, and off the Atlantic coast on the 18th and brought fine quite cold weather from the Lakes to the Atlantic. No. 7 was apparently subsidiary to No. 6; developing on the 17th over the North-west it passed southward and soon disappeared. No. 8 appeared over Northern Alberta on the 18th and quickly assumed the proportions of an important area. On the 20th it extended from the North-west to the Gulf of Mexico and was attended by extremely low temperatures throughout the North-west. After the 20th it decreased in energy as, accompanied by low temperature, it moved southeastward to the Atlantic coast, which it reached on the 21st and then took a northeasterly course to Labrador. No. 9 did not show much energy, although it became rather extensive for a time. Between the 21st and 25th it passed southeastward from the North west Territories to the middle Atlantic coast. No. 10 was centred over Alberta on the 25th, whence it moved quickly southward to Texas and then eastward and off the Florida coast. No 11 first appeared over the Lower Lokes on the 26th and moved as a small and unimportant area by an erratic course eastward to the coast and then northeastward to Newfoundland. No. 12 started over the North-west on the 29th and at first apparently moved westward, then took a southerly course and at the end of the month was centred over Colorado, extending from the North-west south to Mexico and from the middle Pacific coast eastward to the lakes, being attended by more moderate temperatures than those preceding it. Eventually it almost entirely dispersed, what remained of it passing off the middle Atlantic coast on April 1th.

### LOW AREAS

The tracks of fifteen low areas have been charted during the month, two of which came from the Pacific or British Columbia and passed east and south east across the continent, one came from the north-west States and moved due east to the lakes, three from the middle western States, moving at first south-eastward and then north eastward, five from the south-west States, moving generally north eastward, two from the middle eastern States, one passing out to sea and the other up the coast and over the Maritime Provinces and two started at the middle Atlantic coast and passed north eastward

No. 1 was, small and unimportant area, which on the morning of the last aneutral over Mont ma, whence it moved eastward to the Upper Ottawa Valley and dispersed. It could be snowfalls throughout the North-west, Manitoba, and northern Ontario. No. 2 was a shallow depression it and of short duration, which started over Ohio on the 2nd, and dispersed next day to the south-ward of Nova Servia after giving a moderate snowfall in the southern portion of the Maritime Provinces. No. 3 appeared over Indian Territory on the 2nd and took a north-easterly course, developing into an important evelone on reaching the lakes, whence it continued in its north-casterly course, passing to Labrador. During its passage fresh to strong gales prevailed from the lakes to the Atlantic accompanied by a fall of snow or rain. No. 4 was a very slight depression when it first appeared on the morning of the 6th over Tennessee. It moved at first south-eastward to the Atlantic const where it quickly developed into an important cyclone and then taking a northese torly course up the Atlantic coast passed over the Maritime Provinces to Newfoundland; a fresh to heavy gale with snow and rain attended it as it crossed eastern Canada. No. 5 moved in from the Pacific and over British Columbia, its centre not being clearly defined until the evening of the 7th when it was near Calgary. It was a depression of moderate energy and passed with decreasing energy eastward across the North west and then south-eastward and off the middle Atlantic coast. No. 6 was first defined on the chart on the morning of the 9th as centred in Utah. It took a rapid course first south eastward, then north-eastward to the lakes and then east passing over the Maritime Provinces on the night of the 12th. It attained considerable energy on reaching the lakes where it gave high winds and a fall of snow or rain, but decreased somewhat in energy on its course further easyward although the same characteristics attended it there as at the lakes. No. 7 apparently came from Mexico and was centred on the morning of the 14th over Kansas. It developed considerable energy on its way north-east, ward to the lakes, where it was attended by fresh gales, snow and rain and local thunderstorms, the precipita tion being in some places excessive. From the lakes it moved costward to the Maritime Provinces which it reached on the 16th and then passed out to sea. It was attended throughout eastern Canada by a moderate to fresh gale and the same conditions as regards precipitation as over the lakes. No. 8 was first fairly well defined on the morning of the 16th as centred over Colorado whence it took an easterly course to Pennsylvania, increasing in energy as it travelled and giving high winds and light snow in Ontario on the 19th. Then taking a northeast course it continued to increase in intensity and on reaching the Maritime Provinces had become a very important cyclone, the barometric reading at Chatham, N. B., on the morning of the 20th being 28:72 inches reduced to sea level, and a heavy gale was blowing from the lake region eastward to the Atlantic and heavy precipitation occurred in the St. Lawrence Valley and Maritime Provinces accompanied by local thunderstorms in the latter. It passed off the Gulf coast during the 20th.

No. 9 formed during the night of the 20th in the south-west States and moved quickly north-east to the lake region where it caused a fall of rain or snow. It was otherwise unimportant and soon dispersed over the lakes on the 22nd. No. 10 was centred over Indian Territory and Arkansas on the morning of the 22nd and took the same course as No. 9 to the lakes, but continued further north-eastward dispersing over eastern Quebec. It caused strong winds and gales with snow or rain and local thunderstorms in the lake district and although afterwards decreasing in energy it caused heavy snowfalls in eastern Ontario and Quebec. No. 11 was a small depression which first appeared on the Middle Atlantic coast on the morning of the 23rd and moved north-eastward to the Maritime Provinces, where a moderate development occurred, and strong winds with a fall of snow took place. It eventually dispersed over Nova Scotia on the 25th. No. 12 appeared over British Columbia on the 24th and was centred at night over western Alberta whence it took a southeasterly course to Iowa and then an easterly course to and off the middle Atlantic coast on the 26th. It was a depression of moderate energy and caused local falls of snow and rain throughout its course. No. 13 was centred over the western portion of the Guif of Mexico on the 26th and moved quickly northeastward over the lake region to the Gulf of St. Lawrence, which it reached on the 30th. As it travelled across the continent it developed considerable energy and during the night of the 28th a secondary developed near the middle Atlantic coast, and next morning was centred in Maine, while the primary was centred near Montreal, and one of the heaviest gales of the season set in between the lakes and the Atlantic. The two soon joined and the combined system moved north-eastward with diminished energy. No. 15 was apparently centred as an ill-defined area over Utah on the morning of the 23th. At passed southeast to Texas and then recurving took a north-easterly course to the middle Adantic coast. It was not an area of much importance and did not disturb the weather in Canada.

### WINDS,

In British Columbia the wind reached the force of a gale on two occasions, and the most prevalent winds were south-westerly. In the North-west Territories, the prevailing wind was westerly and there were two gales during the month, one of which was heavy. In Manitoba, northwesterly was the prevailing wind, and two

moderate gales occurred. There were no gales reported in the vicinity of Lake Superior, and the most prevalent winds were from the north west. In the Lower Lake District there were five gales, two of which attained the force of a strong gale; the most prevalent winds being from the east. Eight gales occurred in Quebec, of which three attained the force of a strong gale; both the easterly and westerly winds were most prevalent. There were three heavy and four moderate to fresh gales in the Maritime Provinces, whilst the greater number of winds came from the west. A brief description of each storm in eastern Canada where navigation remained open is as follows: A gale occurred on the 5th which in some instances reached the force of a heavy gale which was warned that morning, but in some instances the warning was late. On the 7th a strong gale occurred, the wind at Grand Manan reaching a velocity of 65 miles per hour. This was warned for the previous day. A moderate gale occurred locally on the Bay of Fundy at night on the 12th, which was warned for that morning, A strong gale with Grand-Manan recording a velocity of 45 miles per hour was blowing on the night of the 15th and during the 16th which had been warned for on the morning of the 15th. All eastern stations were warned on the morning of the 48th for a strong gale and on the 19th and 20th a strong gale prevailed throughout the Maritime Provinces, a velocity of 54 miles being recorded at Grand Manan. There was a moderate gale locally in the Maritime Provinces on the night of the 23rd which had been warned for the previous night. A warning was sent on the night of the 28th for a strong gale to all eastern stations and on the 29th and 30th a heavy gale prevailed.

### BRIGHT SUNSHINE.

The amount of bright sunshine was slightly above the average in the lower mainland of British Columbia and slightly below in the upper mainland. In the North-west and Manitoba it was generally above to a slight amount excepting near Battleford where it was slightly below. Everywhere else east of Manitoba it was slightly below.

### TEMPERATURE.

Charlottetown reports temperature one degree above average and Quebec, Father Point, Halifax and Victoria, B. C., just average. At a few places in southern Ontario the average was also maintained but the temperature was much below over the greater portion of the Dominion, and the deficiency was strikingly remarkable in southern Alberta and Assiniboia where it amounted to between 15 and 20 degrees. This part of Canada also gave the largest amounts below average in February.

The Highest and Lowest Temperature in each Province during March, 1899, were:

British Columbia,	68 .0 on 26th at Agassiz.	31.0 on 1th at at Atlin Lake.
North west Territories,	51.0 on 6th at Calgary.	=37 .0 on 3rd at Moose Jaw.
Mamtoba,	41.0 on 9th Emerson.	-36 .0 on 6th at Portage la Prairie.
Ontario.	65,0 on 11th at Welland	=39°,5 on 17th at White River.
Quebec,	18.0 on 12th at Brome.	=22.8 on 18th at Chicoutimi.
New Brunswick,	501.8 on 6th at Fredericton.	21 .0 on 14th at Dalhousie.
Nova Scotia,	56 .2 on 20th at Truro.	—1 .4 on 15th at Parrsboro.
Prince Edward Island,	51.0 on 17th at Hamilton.	-2 .0 on 15 at Hamilton.

### PRECIPITATION.

Precipitation was half an inch below average at Victoria, B.C., and between five and six inches below at Port Simpson and slightly below over the greater portion of British Columbia and Manitoba; locally somewhat below in Alberta, the Lake Superior Region and Cape Breton, and in all the remaining portions of Canada, above average, and largely so from the Lake Region to our Atlantic coast stations. Montreal exceeded the average by 5°2 inches; St. John, N.B., by 3°8 inches; and all Ontario by from 2 to 3 inches. In the northern portion of Ontario and over the Province of Quebec, as well as in northern New Brunswick precipitation was largely as snow and some very heavy fulls occurred, particularly those on the 16th, 20th, 24th and 29th.

00

Zor of Fogs.

. . .

STATIONS IN THE DOMINION OF CANADA, MARCH, 1899. \* Stutions not furnished with Rogistering Thormometers. PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT a Baromoter not reduced to Sen Level.

21-202 . . . . ......... No. of Thunder storms. = = ......... 0000000 .... = = Zo of Auroras. 221201**223**8 251255622 Ξ 955 757 1,2256 No. of Fair days. Day-with Olermore 5072 23 28 31 145 255 256 :25 F -1 130 B PRECIUTATION. 1791 I + I + I10.10 === Пойстепсе бтоп 2 3 3 5 E Velocity of Wind. -ib bas stad mort goilest Highest day's relocity. Mean miles ء ج Total number of honrs. . 문장되 1일 1절 왕정동창당동균용당동 ==뭐=유만였으므라 : -o l PROM X. W. 11. WIND 'M 'S à ·S DIRECTION 8' E' Ε. Z' E' 'X No. of days comple-Mean relative midity. 2 Mean temperature of 21117 25------25252535 68855355 3 × 1 × 1 5.5 등점 -aguer 15 515 12 11 11 Mean daily :E1E5 taire! 95=3562525=55 5533559555455 .dsowed. TEMPERATURE. 취속의율위의보다 123 12.2.7 1929 1188 Highest. 7678 7078 J Galls observin TOM SACISAC Pifference 48=8448 =888888 8888888 Range. PRESSURE. Lowest, SEREERS REREERS 11:806811 3.3 로부터로부족을 Mean reduced. 888888 Elevation above Sea Level, in feet. は高くない子高品級下名 音音は音音を子言を言う 一型高等ではコミューは 2 2 12 2 Longitude W. .X abutited Promise Comments

Climera

Climera

Griffin Lake

Griffin Lake

Correna

Childran

Chi Wintering
Aures/ar
Aures/ar
Port Stangen
Port Stangen
Port Stangen
Radiopers
Radiopers
France Radio
Practical
Radiopers
France Radio
Place Radio
Radiopers
France Radio
Radiopers
France Radio
Radiopers
Radiopers result Forks Netson Kelowin Arlin take N.-W. Territoriks: Medicine Hat STATION. Вкітічні Сопемвіл: Edmenton Swif Current Qu'Appello Cultary Prince Albert Butti-dord Omnikup

STATIONS IN THE DOMINION OF CANADA, MARCH, 1899. \*Stations not furnished with Registering Thermometers. PRESSURE, TEMPERATURE, VIND AND PRECIPITATION AT Larumeter not reduced to Sea Level.

---space copecensersnasses 'sao'l lo .ov | : : === . . . . . \*\*\*\* 22222 surots bund The oX | 0 x 0 0 0 :: : : : = <u>@</u>1-= c = No. of Auroras. 48245 8622FF54X 85565555 422 \*\*\*\* 617 - 61 No. of fair days. c-a-Doce with Otor more 다음 후의 취, 855 89588888 6694996 2895855 8888 : 5 12 ā 5.0.32 64.0.43 64.0.44 54888 85287228 Heaviest fall in Linearing | PRECIPITATION. : 0 38 38 = -0000 EXPR 38822382 3822382 trom Average. 1 701 1977 | presentation 19318 0-49-0 Ŷ 7 Ę ======== гищетепсе 488 319 1 15 :892525 78888 .88886888 2882 2.8 88888888 iccson-WIND 19 N M 12 NE 23 NE 5 N 14 NW -ib bare stedl -inort noiteer 8 93 S 201-0 S. Highest day's 17 VELOCITY ( **=288**  $\frac{1}{2}$ E == Mean miles per Total number of hours. 1207 o 888 850 a no 21 ъ. 두원 <u>\_##55</u>502086 :635 'AUX WIND FROM CC C3 a 82 - . 22 4 25 85 a a a - 8 'A\ 556747655 '.M'S Ġ ·s PRECTION 02548100081-SE ္<u>ထ≾</u>≘က္ဖက္⊣င္ည Ε. :- 15 4 4 2 2 2 2 2 E : : c1-Z = E'455 KBC 021 +t-g := 1-≘ 707  $\chi$ 742<u>9</u>0 9 Mean amount Mean relative raidity. Mean temperature of taBitta. Alean daily 57 នៃភ 8 :ត မ်ားရှမ≘ရျက 93nd 2000 85 1 55555 17111 100000 1999 2 **845448** LOWest. 'alrd Jeadaill 22 93 days obsertt. Pifference линэ К 888 1997 2888 8888 :517 \$ 1.30 :88E8 ានពេះប្រ **4888** รถสสล 57 1:81:6 .8 7.6.5 8.8.8 : : ленцін 855 2888 再二点 98.29 #355 : 8888 : Mean reduced. 888 1690 1760 1760 1760 1760 Elevation above Sea freed in feet 1957 용병투통하다 :23 <u> 41-85</u>=2-동원으로하다 "M abutiqued · 255255 58554585458 \$63558545455 19 74 100 5 11 34 100 5 22 4444448888888844448944 합당장 취취 818 .828 M abutimal 542 558884 844444484884 F34446664446444444666446 Knethill
Massagetina
Fatt Simpson
Fatt Simpson
Fatt Simpson
Fatt Simpson
Fatt Simpson
Fatt Fatt Simpson
Maximus
Winnerleas
Winnerleas
Fatt Sidorne
Fatt Sidorne Operages

Surface
Colingwood
Colin Regina Indian Head. Sannington Manor Macleod .-W. Territories-Con. Yarow Gateszarth Grenfell Kneethill Muscowpetung a Part Associate
a Partage la Particio
Brandon la Brandon l'Allande Lishad
Strony Mountain
agnissell Orillia Coldwater Beatrice STATION Treherne Rosebank Inflyiew.

			930H H2: 20:2 2	r
		-442 000		
연구성으면나는은 영화성본으로의		#468#2		은 요시 요요한 한 원 현
ಕೊಂಡಿಕ ಕ್ಷಣಗಳ . ಇದ್ದಾನಕ್ಕಿದ್ದರೆ .			N-88 -168 #289 #	지 반속 요즘에 바 그 요 요 요즘 뭐요. 요 용 닭
	្សត្សនិងស្ថិត្ត ខេត្ត	225 285 28 227 275 729	190   end   e	15 15 48 16 17 17 17 17 17 17 17 17 17 17 17 17 17
28482282 : 12928822	:= -= = = = = = = = = = = = = = = = = =	ଓର୍ଜ ଅଧ୍ୟର୍ତ୍ତ ଜଣ୍ଡ ଜଣ-ନ	8. 1872   1884   1878   3. 1884   188	7 154 jag j. 5 13 15 1
# 65 NW 12	海利用语中国最中	55 H		N
2 × = 5	==	73		
5 2 -22 1				
8 88841 1 2 8888	HE THERE IS I B	185     18 + 18	: . 홍 : 달 : 월 : 달 : 달	분호회문의문학의 의 <sub>부</sub> 의 <sup>(</sup> 의
1 0 0 0 8 8 1 1 0 1 1 1 1 1 1 1 1 1 1 1	197 : 1720 : 19 : 18	mat Pilat		- 보-무여우 <sub>리</sub> 우를 (프 )의 (S)
- x2778 - 10 2 x	:" \$ : : 82' : " : . \$	N <b>™</b> o . : n i in i	Harl States	5-0-85 # 14 14 1
는 원·의 시설 중 : : : 유 : : · · · · · · · · · · · · · ·	198 : MAR - 19 : 1	== : = :		말~하글=로== ;= ;로 ,로 ,로 ,로
9 E-F8 # 1 6 F F F	[원취 ] 하다음 : [이 : [다	·Bollen . [7]		날×티즘으수하여 [이 [이 ]의
c 3:1788				X 11 x 12 ± 12 ± 12 ± 12 ± 12 ± 12 ± 13 ± 13 ±
8	:="   THE   S   '			월2======= := [품];또 :
e = = = = = = = = = = = = = = = = = = =	21 1 1 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3		11151111211211	우리당 말 보는 뭐 그 날이는
# 1-648# - 12 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15	× = 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
#   ###FE - :   # :   *   *   *		ent in the		를 크는 다음이 제 : 이 [조 ]
5 - 9g5 : 2 : : : : : : : : : : : : : : : : :	4 : F F F. 198	P : : : : : : : : : : : : : : : : : : :		"1" FF :::::":
€ 10 10 × 1- 1				e =   (-1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 +
	:8 : : : : : : : : : : : : : : : : : :			¥
				<u>- 5</u>
28   2022   1222   2222   2322	::::::::::::::::::::::::::::::::::::::	252 E   252 253 E   252 254 E   255	= 1	2012 C
	- v - o z z z z z z z z z z z z z z z z z z	200   3300-n 200   -00000	emes 557 5555 5	
######################################	======================================		:=2253  355  3522 :=   	- ca 5282-52 - 12 2 2 1 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1.000000000 1 00000000 1	Հರಧರ್ಮದಲ್ಲಿ ಇದ್ದಲ್ಲಿ ಇ	=====================================		######################################
/ DODGI-GER -FRANCY -I	40 / NIGGS - #5 5 - 13	10 x 20 11	210110 200 - 1 1- 1- 1-	승인하면 안에다 보는데
000-000 -000-00-00-00-00-00-00-00-00-00-	586-586-588 5 -555-655-8-8 5 L''	5-1	1-1-27 -710 -117 1	
	りゅうひょいーロメのカメーカ	XX = (500011-11-11-11-11-11-11-11-11-11-11-11-1	4852 907 3407 7 8288 884 884 8	1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
		ee too o		
		85		
i <u>ii</u> aaa <u>iiiiia i</u> i	ina ti artifatti	aa illiilii		- & 116 - & 1311114111
: : : : : : : : : : : : : : : : : : :		59		
883 H	[ : \$ : : : \$ : [ : \$ : : ] [ : 6 : : : 6 : : ]	84 88	. 1 1 - 2 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
2 .0	and after a final and a final	 중부:::-독 중 중		25 \$28 : : : : : : : : :
88782242882326298452		us=sH=5H=8H		- 第78日9年日47878年
242222222222222222222222222222222222222				54855888875
######################################	1000 <b>0000000</b> (099 <b>0000</b> 00000000000000	2244222222 2244222222	5252489545 (49 ) 8252928445 (62 )	000827888888888 8887888848888
				Openics  Rechmond Rec
E	¥ . 4	# x = 12 x	: 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1	M. Pr. Br. E. Pt. Pt.
murter unfor unfor unfor information strock	my Creek rends History History History Helder (William on the Marketon Marketon Marketon Marketon			A STATE OF THE STA
Syrvano — ('on Gravoun's Convolues', Gravoun's Convolues', Convolu	Story Creek Trough Creek Trough Creek Nastar Nastar Indexide Index	Ottown Basset Mattana Carlter Sardyle Stoulfydie Sarmia Struia Barrie Frasidus Frasidus	Bioomfeld Culvain Culv	Mourted Richmond Richmond Richmond Rouse Chesotrani Finther Point Point des Vortes Chesotrani Finther Nation Fi
0 	retranska filosofia Retranska filosofia	SHACKKKREHU	EU. EREKENEMIUEZ	0 0 0

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DÓMINION OF CANADA, MARCH, 1899.

a Barometer not reduced to sea level. " Stations not furnished with Registering Thermometers.

				32			
oline.	1 No of Thund, st I No. of Pogs.	E	-040000	ಹಾರುವರ ರವರ ವಟ ಎರುಚ್ಕರ:ವ∞ಪ್ .∺ರ	1 0 1	00 C	62
	No of Pair days		882 8888 882 8888 883 888 888 888 888 888 888 888 88	22223 223 45 15001 500 10	9 88	`cc .0 48 :∄	19 0
	To 10 diam squal 1	- 12	arage cas	255880 1-1-0 WE	3 .6 %	<u> </u>	Ξ
×	ni Het tsvivseH   d)nont	in. 0 S 0	8 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	78888	5 2 E	38 · 38	
TATI	1): Истопов При в устави	.i : : 1	열 않. B추었음23 61 (*) 6666===	왕왕왕왕도 유하유 : 경 무구원의 연주인 : 현	3 5 . I I	85 : 19 85 : 19	34
PRECIPITATION	l :	_ ::=	262846 PEE	[문학 : 우리를 보통했다	# :S#	85 : 18	Ë
I	Junount.	# 17	*	1-00कातक किएक किएक -	<del>चा</del> :0100	e1    -	C3
VELOCITY OF WIND	Pate and direction from .		N N N N N N N N N N N N N N N N N N N	9 9 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	W < 08	#4	-1 S W
OF V	Velocity	: : :	1 80 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6: 42 × · · · · ·	1-:::	12 % TA	ct
TIDO	s'yrti traifaiH	- 11:	111		81		ž.
VELC	194 səlim neəlk ruəd			722	1-		
	Totatur LetoT   streat to	· :8	용량통7분원 : · [등	44848 1923 · ·	7- 18:	5 S	문
	2	: 100	<u> </u>	- # - = · · · · · · · · · · · · · · ·	¥ 0 :	_ C 11   C	
FROM	Z:W		8,4254	981 198	& <sup>(g</sup>	150 : 5	-
G C	.w.]	: 23	2 SEE	등 정보으로 (Proc. : : : : : :	3 4	_ = 88 : 11	7
WIND I	w.s.	÷: ÷	್ಷಾತ್ವ <u>ಕ್ಕ</u> : ' : <u>*</u>	* å # B # 11 6 8 + 1 1 1 1	(3 3)	2-1-2	- 23
N OF	s	: : **		1024:: 10-15	* : <sup></sup> _		4
DIRECTION	.a.e.	114	1-연수분유로 Ed. H	#67#" : ###	5	ng . 4	
Dig	Т.	: :73	F48765	26°° E≅ : T4 † : : : : :	\$ .F	78 : 5	_
	Z.E,	:::₹	9°785° 11	48884 in 4	104	11 5	5
			0-25-40 Hu	\$2°27   1947	79	2º 5	
-otale	Xo. of days comp	- 111	월급조마르큐 ::	Pagare III IIII		Ge.	0.1
10 1	Menn amount	- : : :		21-1-1-10	11.	1+12	4.5
- n II	Mean relative		2115111				:
to 931	Mean temperatu   Dew point	:::	5 : : : : : : : : : : : : : : : : : : :				:
	Mean daily range.	> : : <u>-</u>	202   22   274 caa   12   020	80000 H TE	151	11 13 5 1511 7 1511 7	11 2
	Jate.	: .9	252: 44: 252	TERRE : 1244   154	9 129	_ == = = = = = = = = = = = = = = = = =	25
	l,onest.	2 : : 2	77 77 78 77 78 77 78 78 78 78 78 78 78 7	+4450 1-2P 1-5	# E 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	76 16	89
TEMPERATURE.	[] [] [a]	- 1-	유유소원일만 10소점	ଜୁଲିନ ଲ୍ଲ ନ	2 - 11	अञ्च : ज	+5
F It A7	Bengill	o : 21	% 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	######################################	+ 00 2 45	- 00 0	- :0 P2
Itar	Jours observi	1	888888 717	88525 929 01 4866 605 6	# II	\$	1
	Гран аустяде.	• 1	111111111		-		- 1
	Mean	, in	#84848 888	989 989 989 989 989 989 989 989	883	55 : S	- 8 39
1	1	:	:	4884::::::::::			
١.	Fange.	<u>, i : : : : : : : : : : : : : : : : : : </u>	788 E	######################################	19 1 1 1	38 1.0°	9 11
SURF	, tsowool			aasa iii ii ii ii ii	8	ĝi :	es.
PRESSURF	Highest	.i i i i	555 5 555 6 555 6	4828 : : : : : : : : : : : : : : : : : :	롱 : : :	8 : i · i	30 42
	besuled an 40	# 1 1	288  8	5889 888	86 : : :	ğ, : : : :	30 14 30
ваз	avode abovafd Jean m.Javed	8	38888 P	4888 : 99 : 8 : 59 : E	8	51 :: S	151
	. $\mathcal{U}$ obstitude $\mathcal{U}$ .	61 5 64 13 64 13	8953838563 85538385558	\$28888864699232326 \$2868864699232326	2874 3888	25555 353355	8
	.Z abutitaI	- REE - 444	25442544555 2544554555 2544554555	으로워운왕시청일본(355청년) 국무장원왕(국일왕(355청년)	######################################	arres 44558	ā ķ
		1 1 1	1 11111111			ENFOUNDLAND: 45 Ele John's 45 Cape any Moris 45 Cape Norman 55 Point Rich 59	
		3					:
	STATION.	netim	TCK:	d. M.	w.n.	S Hard H	
	=	1   1   1   1   1   1   1   1   1   1	ictor Mar Mar Mar Mar Mar Mar Mar Mar Mar Ma	A The state of the	town freto- freto- on	NPLA N N N N Poir Uch	55
	*1	GCEBEC-(Continued) Bird Rocks Pierce Perce	NEW BENNSWER. Prediction Charles Manna Orania Manna Point Leprena E following Raffors Rade N. Schilden Mancolin Raffors Rade N. Schilden Mancolin User Manco	Mar. Scotta. Svaltav. Svaltav. Svaltav. Framouth	P. E. ELLAND: Charlottetown Georgetown Summerside Hamilton	Newfoundland St. John's Clip any Morfis Cupe Norman Amour Point Point Rich	Bernupa: Prospect
		28 4	EREGERIZERS	REARING SEASON	걸등관공료	842704g	Ber

# PRECIPITATION AT STATIONS REPORTING RAIN, SNOW AND WEATHER, ID RING MARCH, 1899.

			Rvs				ς.		
STATIONS	11. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	Days of or Over.	No of Total Days.	H	h •	Av	N	H I VI ·	
British Contynda Valdez Island Cumbedand, Goldstream Lake Nanauno Langley Beaver Crock Royal Oak Saft Spring Islanda,	2 77 1 50 4 24 1 91 1 91 2 19 2 00 2 17	10 6 10 6 7 9 12	21 23 15 22 21 14 19 21	0 550 0 74 0 74 0 70 0 55 0 47 0 97		1 0 24 5 7 0 16 3 15 3 6 3	2	1 -	
North-west Territories— Saltcoats West Beaver Hills							-		
Manifold Pembana Crossing									$\begin{array}{c} \Lambda \\ \gamma_{\alpha} = 0 & \frac{1}{2\pi} \\ \Lambda \end{array} \qquad \begin{array}{c} \Lambda \\ \vdots \\ \Gamma \end{array} \qquad \begin{array}{c} \Lambda \\ \vdots \\ \Gamma \end{array}$
Belmont Rapid City Hartney Norquay									A
Orangeville Orangeville Ennimore. Roblin's Mills Wyoning Georgetown Crayden Autoria Jerman Doer Park Elzin Watford Enislabe Sparrow Lake Coldstream Kritey Mostrame Providence Bay Mill and Lansdowne Parma Arden Wooder Ursa Thompson Sunshine Huntsville Dealtown Cowal . Scariors' Wiarton Princeton Oliver's Ferry Willton Grace Lans' Head Golerich Cherry Valley	1 47 1 50 1 7 1 7 2 65 2 48 3 16 4 2 95 4 1 90 6 7 6 7 6 7 6 7 6 7 6 7 7 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7	8 4 8 8 4 11 1 2 5 4 4 6 7 4 4 10 8 7 6 6 8 8 10 4 4 5 8 7 5 1 5 1 5 1 5 1 5 1 5 8 8 8 8 8 8 8 8 8	123 553	1.1.000 0.00	10 (21) (10) (10) (21) (22) (22) (23) (23) (23) (23) (23) (23	12 (10 m) 4 m × m × m × m × m × m × m × m × m × m	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	17 - 10 - 0	20
New Brunswick Point Escummac	11 +.~	ī	1 ~	0.47	2 )		`		
Nova Scotia Port Morben	3-12	`	15		20	‡ · ·			17
P. E. Island Port Hill	1.67	٠,	22						

#### TEMPERATURE recorded at Selkirk, Yukon, during March, 1899.

D	Maximum M	Immon	Range.		D.A	Махипын У	lmmoun	Range.
						-		
1	11 0	51-0	23.0	1 -		27 0	6.6	21 0
<u>0</u> .	15.0	40-0	31.0	15		31.0	15 0	16.0
	15.0	25.0	i] 0	19		27. 6	18 0	9.0
1 .	17.0	450	28-41	20		27 0	2.0	29.0
5 g	Den	43.0	25 0	21		21.0	2.0	23 0
<b>6</b> ,	41.0	37 0	25 0	-1.		19.0	20 1	21.0
7 .	3.0	39 0	36.40	200		20.0	2.0	22 0
8.	10.0	25.0	15.0	21		20.0	23 0	13.0
D .	× 11	26 0	15 11	25		11 0	, iO - O	41 0
16.	5.46	20.0	15.0	26		3.0	19.0	16.0
11 .	9.0	9.0	15.0	27		13.0	15.0	28.0
12 .	19.0	;× 0	::7 0	23		21 0	1.0	22 - 0
13 .	10-71	3.0	13.0	-ji)		28.0	11.0	39-0
14	20 0	]0.0	30.0	.40		23.0	9.0	35.0
15	1 ~ 0	1.0	22.0	541		30 0	15.0	15.0
16	15 0	15.0	30-0					
	Mo	nthly no	-11		1 (2)			
	He	<u></u>			34 0 on 18th.			
	Lo	west				and Grd.		
	Mi	an dady i	auge .		25-2,			

Thunderstoins reported on-

- 5. Yarmouth, Port Dover, Moncton, Wolfville, Hamilton, P.E.L., Summerside, St. John.
- 6. Yarmouth, Pairsboro, Summerside.
- 7. Bermuda.
- S. Parrsboro.
- 10. Bruce Mines.
- 11. Thompson, Agincourt.
- 12. Richmond, Brome.
- 14. Dutton, Princeton.
- Welland, Lucknow, Hamilton, Brantford, Ridgetown, St. Ann's, Stratford, Durham, Port Stanley, Wyoming, Coldstream, Lansdowne, Dealtown, Dutton, Scarborough, St. George, Niagara, Stony Creek, Birnam, Port Dover.
  - 16 Sunshine, St. Ann's.
  - 20. Yarmouth, Ennismore.
  - 21. Niagara.
- 22. Stratford, Geavenhurst, Durham, Coldwater, Guelph, London, Port Stanley, Georgetown, Aurora, Coldstream, Dealtown, Scarborough, Princeton, Wilton Grove, St. George, Stony Creek, Birnam, Point Clark, Collingwood, Lucknow Erasmus, Port Hope, Hamilton, Brantford, Pickering, Ridgetown, Barrie, Sarnia.
  - 24. Bermuda.
  - 29. Bermuda.

Aurora recorded -

- Where the class of ancova is noted by the observer, it is given (I) being the beganst, (IV) the fieldest in heilliancy
  - 1. Cape Chatte, 111; Pembina Crossing, IV.
- 2. Russell, IV; Channel Island, IV; Quebec, HI; Perce, IV; Hill-iew, HI; Aweme, H; Treherne-Red Deer, IV; Muscowpetung, L. Moose Jaw.
- Russell, IV., Channel Island, IV.; Minnedosa, IV.; Cockburn Island, Savanna; Pembina Crossing, IH.; Regina, III., Atam Lake.
  - 4. Atlin Lake
  - 6. Channel Island, IV; Father Point, II; Quebec, IV. Savanne; Cipe Chatte, IV; Red Deer, IV.

- 7. Port Arthur, II. Calvin, Treherne.
- 8. Channel Island, IV. Beatrice, IV
- 9. Channel Island, IV: Quebec, IV. Savanne, Pembina Crossing, IV: Regina, III.
- Fredericton, IV: Russell, H: Truro, IV: Channel Island, IV: Prince Albert, 1 Father Point, 411;
   Quebec, IV: Perce, 411: Chicontimi, Awene, 411: Cannington Manor, H. Pretou: Regina, I.
- 11. Russell, 11: Channel Island, IV: Battleford, IV: Chicoutimi, Pembraa Crossing, 111: Belmont Hillview, IV: Aweme, Portage la Prairie, 111: Treherne, Cannington Manor, IV.
  - 12. Minnedosa, Belmont, Aweme, IV; Cannington Manor, IV; Red Deer, IV
  - 13. Cockburn Island, Savanne, Pembina Crossing, IV: Awene, IV: Treherne, Duck Lake, IV
- Russell, H; Channel Island, IV; Battleford, IV; Quebec, IV; Cape Chatte, I; Pembina Crossing,
   IV; Hillview, IH; Duck Lake, H; Red Deer, IV.
- Russell, III; Channel Island, IV; Prince Albert, II; Savanne, Pembina Crossing, III; Ilillview, IV; Portage la Prairie, II. Treherne.
  - 16. Russell, IV: Channel Island, IV: Battleford, IV: Savanne, Pembina Crossing, IV
  - 17. Battleford, IV.
  - 18. Regina, IV.
- 21. Fredericton, IV; Emerson Russell, H; Channel Island, III; Banff, III; Minnedosa, II; Quebec, IV; W. Beaver Hills, Quesnelle Forks, anasnally bright, Moncton, Sussex, Chicoutini; Pembina Crossing, I, roscoloited, Belmont, Aweme, III; Treherne, Cannington Manor, III; Red Deer, I exploition t; Muscowpetung, I. Moose Jaw; Regina, II; Atlin Lake.
  - 22. St. John, I; Regina, II.
  - 23. Savanne.
  - 24. Treherne.
  - 28. Russell, IV: Hillyiew, IV
  - 29. Muscowpetung, 111. Moose Jaw., Regina, 111.
  - 30. Regina, IV.
  - 31. Russell, IV; Truro, IV; Hillview, III; Red Decr. II.

Appearance of spring birds, &c.

Crows.—Spence's Bridge, 5th; Gravenhurst, 2nd; Stony Mountain, 30th; Midland, 6th; Ursa, 10th; Thompson, 15th; Sunshine, 2nd; Richmond, 1st; Clontarf, 6th; Calvin, 7th; Barrie, 1st; Emo, 26th; Meaford, 12; Lakefield, 10th; Erasmus, 7th; Whiteside, 12th; Owen Sound, 4th; Orillia, 11th; Beatrice, 14th; Point Clark, 8th; Stony Creek, 12th; Haliburton, 11th; Bancroft, 15th; Midway, 30th.

Cedar War Wings .- Toronto, March 1st.

Robius.—Kuper Island, 6th; Chilliwack, 14th; Spence's Bridge, 6th; Stratford, 15th; London, 12th; Port Stanley, 12th; Wooler, 27th; Scarborough, 31st; Beaver Creek, 6th; Clontarf, 25th; Ridgetown, 14th; Stouffville, 16th; Meaford, 30th; Brantford, 20th; Lakefield, 14th; Owen Sound, 2nd; Paris, 12th; Birnam, 1st; Stony Creek, 12th; Bancroft, 25th; St. George, 20th; North Nicomen, 12th; Hazlemere, 6th; Toronto, 13th.

Blue Birds.—Spence's Bridge, 11th: Port Stanley, 12th; Toronto, 24th

Out .-- Whiteside, 11th.

Black Birds. Birnam, 14th.

Phoebr. -Lakefield, 6th.

Meadow Lark.—Spence's Bridge, 2nd; St. Stephen, 23rd.

Grese. Stouffville, Ist.

Frogs Piping.—Kuper Island, 6th; Chilliwack, 14th; Beaver Creek 6th.

## PROPORTION OF ERIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF MARCH. 1889.

#### HOURS ENDING

	, c. II.	6 a.m.	, t dam.	x E	-5 a.m.	10 ж.ш.	П ало.	North.	l pani.		23 P. iii.	f p.m.	ê pani.	6 1	12.15	X E E
Esquimalt .			0.09	0.24	0.39	0.49	0.42	0.35	0.50	0.57	0.55	0.55	0.39	0.18		
Kuper Island												0.61				
Agassiz, B.C.						_						0.34				
Battleford .		7.										0 43				
Indian Head												0.51				
Brandon												0.55				
Winnipeg.												0.61				
Winnipeg. Durham												0.30			٠.	
												0 16				
Woodstock.															41.402	
Toronto												0.37				
Lindsay												0.34			0 04	
Barne .												0.34				
Knigston .												0.40				
Ottawa												0.31.				
Montreal.			0 07	0 23	0:30	0 46	0 44	0.50	0.51	0.51	0 43	0.38	0 27	0 01	!	
Prodericton		0.15	0.33	0.38	0 41	0 46	0.48	0.52	0.48	0 43	0 43	0.35	0 16	0 00		
	Esquimat.	Kuper Island	Agassiz.	Battle ford.	Inchan Head.	Brandon.	Winnipeg.	Darham.	Woundstruck.	Townto.	Lindsay.	Barrie.	Kingston.	Ottawii.	Montreal.	Fredericton.
Mean proportion for month (Constant stanshine being L.)	0 38	0 43	0 23	0 47	0 37	0.51	0 55	0.28	0 22	0-35	0 39	0/37	0 39	0 33	0.39	0.38
Difference from average	+ 03	05	01	04	; 03	i 07	( 0 t		11	08	06	00	06		08	- 03
Maximmii daily amount	. 0.95	0.89	0.71	0.94	0.85	0.91	0 88	0.80	0.86	0-91	0.90	0.86	0.85	0 86	6-99	0-87
Date	15	15	16	+	17	11	11	1.1	1	1.26	7	26	1	6	1	6
No. of days completely clouded	. 3	5	10				5	15	11	_	9	7	91	1.4	12	

#### MARCH FORECASTS.

The forecasts issued by this office at 11 p.m. each night are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 906. These were divided as follows:

	No.		Ven	i ti i	
District.	Issuerl.	No. Fully	No. Partly	No. Not	Percentage
Manitoba	87			17	69.5
Lake Superior	89	63	20	G	82.0
Lower Lake Region	Ios	69	-37	12	76.4
Ottawa Valley	103	67	17	19	73.3
Upper St. Lawrence	102	71	13	18	76.0
Lower St. Lawrence	102	149	19	1.4	76-9
Gulf	97	62	20	15	74.2
Maritime Provinces	98	7:3	9	16	79-1
-	120	74	.94	12	75 S
Total	906	509	178	120	75 9

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

The storm warnings and forecasts for March were issued by Forecast Official H. V. Payne.

#### HAS THE CLIMATE CHANGED!

#### (F. F. PAYNE.)

A question very frequently asked of the meteorological observer is whether the climate is not changing, or rather, whether it has not changed in the last fifty or sixty years, and the questioner will usually add that in his opinion great changes have taken place. In support of his assertion he will point especially to the drying up of streams which before the land was denuded of trees would float rafts or boats throughout the summer. He will also point to the same perio l when there was plenty of snow and good sleighing throughout the winter in Ontario and speak of the "Good old fashioned winters of long ago" believing that if there was plenty of snow there could not have been the high temperature experienced at the present time. There are others, and they are mostly to be found in Manitoba and the North-west Territories, who, on the contrary, believe the winters are colder than they used to be. The most remarkable thing about these people is the change that often takes place in their belief if an abnormal winter occurs: and should two such winters occur in succession their beliefs are often completely reversed

Whilst our insufficient data will not allow us to assert definitely that there has been no change in the climate of the districts mentioned, or in fact in any other part of Canada during the present century, we may state that our meteorological records covering many years show no such change.

The cause of this popular belief regarding the climate is probably owing largely to the change of environment and defective memory, those going from southern Ontario westward to the prairie lands of Manitola and the Territories, forgetting, after many years, the conditions during the first few years residence in the latter district, and confounding in their minds the climates of the two localities. Undoubtedly since the demudation of the land of the trees upon it many streams have completely disappeared, but this is most probably owing to the rain wat r, fornerly held entangled in the vegetation and entering the streams slowly, now making its way to the river beds as quickly as it falls. This sudden swelling of the waters is the cause of frequent floods which were unknown before forests disappeared. Going back as far as our data will take us there is no perceptible change in the total snowfall in Ontario, but where it is not sheltered by trees the depth is quickly reduced by bright sunshine in the open country, even in exceedingly cold weather, whilst in wooded districts it remains practically unchanged.



#### METEOROLOGICAL SERVICE, DOMINION OF CANADA.

# Monthly Adenther Review. VOL XXIII APRIL, 1899. Xo. 4

#### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraph reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

#### REMARKS ON THE WEATHER.

The weather of April, though unusually cold during the first few days, did not depart much from normal; the precipitation, however, was deficient throughout the greater part of the country; and whilst in western Can da the mean temperature was generally below average, in the eastern portion of the Dominion it was above. Owing, doubtless, to the exceptionally backward condition of vegetation on the last day of March there was not the usual progress in April, and on the 30th it was still very backward in most districts.

In British Columbia the weather was for the most part fine and cool, the mean temperature being below average. The rainfall, though light in some places, did not differ much from normal and in a few districts it was above average. Frosts at night occurred frequently during the first week in most places, and they were also recorded later in the month at some stations. Vegetation throughout the province was somewhat backward on the 30th.

In the North-west Territories the weather was exceptionally cold during the first few days of the month, the temperature falling to from -10 to -20 on the 1st and 2nd in Saskatchewan and Assiniboia. On the 5th it moderated and continued mild to the 26th, and although the nights were often cold the day temperatures were comparatively high. On the 26th it again turned colder, snow falling in most districts a day or so later. Although there was much bright sunshine vegetation was backward and warm rains were much needed.

The weather in Manitoba though not so cool as in the Territories was cooler than usual; there was however much bright sunshine, and after the 5th it was more springlike. The pre-ipitation though rather above average at Winnipeg and St. Albans was generally below elsewhere. Vegetation was backward throughout the province but was not so much so as in the Territories.

In the Province of Ontario the weather was cool and unpleasant up to the 11th, after which it became mild and spring like and continued so to the end of the month. In districts bordering on Lake Huron the precipitation was rather greater than usual, elsewhere however it was below average; and vegetation, which was backward, was much in need of warm rain. In districts contiguous to the Georgian Bay there was enough snow for sleighing on the 13th, and in some places even six days later. Thunder storms occurred at most stations and at Point Clarke and Toronto five were recorded.

The weather in the Province of Quebec was exceptionally fine, mild and dry, the temperature being above average and the precipitation below. During the first ten days it was cool but fine mild weather succeeded this, and the snow which in some places was several feet in depth was quickly melted. The lowest temperatures occurred generally on or about the 5th and the highest about the 30th. Frosts were recorded upon several occasions and in some cases they were severe. Vegetation though somewhat backward made good progress towards the end of the month.

The weather conditions in New Brunswick were much the same as in Quebec the temperature being above average and the precipitation below: it was, however, finer, more especially towards the end of the month. Frosts occurred frequently at night and although the days were mild vegetation was doubtless retarded in some districts in consequence. About the 29th the weather turned unusually warm, temperatures from 75 to 83 being recorded.

In Nova Scotia the weather conditions took much the same character as in the two last named provinces, it being for the most part fine, mild and dry; the extremes of temperature, however, were not quite so great and clouded skies were more frequent. Frosts occurred frequently throughout the month and plant life was rather backward on the last day.

The weather in Prince Edward Island was generally fair and mild and the precipitation in most districts was light; night frosts however were of frequent occurrence and vegetation was somewhat backward in consequence. The highest temperatures occurred on or about the 29th and the lowest on the 7th. F. F. Payne.

#### HIGH AREAS.

Five high pressure areas were sufficiently well marked to be traced but none of them were very energetic. No. I was centered in the North-west Territories on the morning of the 1st, attended by very cold weather, Qu'Appelle reporting -24'. The area spread quickly over Canada to the Atlantic accompanied by cold weather, but the main body of the system did not leave the North-west Territories and Manitoba until the evening of the 3rd, when it moved southeastward to the Lake Region and passed on the 6th off the New England Coast. No. 2 travelled over the North Pacific States on the 6th and reached the States bordering on the Gulf of Mexico on the 9th. It then, between the 9th and 11th, spread northeastward into Canada from the Lower Lakes to the Atlantic attended by very fine weather. No. 3 was situated in the North Pacific States on the 13th. On the 15th it had reached Dakota; thence it moved to the South Atlantic States where it was centred on the morning of the 17th. From the South Atlantic States its centre was transferred to the Lower St. Lawrence Valley and on the 19th, and for several days afterwards high pressure and fine weather prevailed from the lakes to the Atlantic. No. 4 moved into the North Pacific States on the 19th, thence slowly over the Lake Region to the St. Lawrence Valley and broke up. It was of moderate energy only. No. 5 moved into the Lower St. Lawrence Valley on the 26th from the northward and thence passed slowly southward to the Middle Atlantic Coast. It was of little energy, but it was accompanied by a spell of very fine weather in the Maritime Provinces.

#### LOW AREAS.

Ten areas of low pressure were sufficiently well marked to be charted and there were one or two other depressions of minor importance whose tracks were too doubtful to be accurately ascertained.

No. 1 appeared in the vicinity of New Mexico on the 2nd, and passed over the Southern States and thence off the Carolina Coast and to the northward of Bermuda. It did not affect the weather in Canada. No. 2 first became well defined on the 5th when on the Texas Coast. It travelled northeastward as a depression of importance, reached the St. Lawrence Valley during the night of the 8th, whence it passed to the Straits of Belle Isle. Between the 7th and 9th it brought heavy precipitation from the lakes to the Atlantic which in the northern portions of Ontario and over the greater portion of Quebec was largely as snow; moderate gales were also generally experienced. No. 3 was situated over Alberta on the morning of the 9th and between the 9th and 11th passed over the Territories and Manitoba and thence north of Lake Superior. It was attended by a few scattered showers only in the Nor h-west but owing to its influence showers and thunderstorms were generally experienced in the Lake Region on the 11th, and in the Ottawa and St. Lawrence Valleys on the 12th. No. 4 passed over Cape Breton during the night of the 12th having moved in from the Atlantic. It caused a fall of rain west as far as Halifax. No. 5 passed into Alberta from British Columbia during the night of the 11th. Between the 12th and 14th it traversed the Territories, Manitoba and the Lake Region and dispersed in the Lower St. Lawrence Valley. It was attended by local falls of rain and snow in the North-west and by numerous showers and thunderstorms in Ontario and Quebec. No. 6 formed during the night of the 15th in the Middle Atlantic States in an existing low pressure trough. On the 17th it passed along the Nova Scotia Coast as a disturbance of considerable energy attended in the Maritime Province by heavy rains and fresh northeasterly to northerly gales. No. 7 passed southeastward over British Columbia on the 15th skirting Southern Alberta on the 16th. On the 17th it covered the North-west States. On the 18th it reached Lake Superior and on the 19th dispersed. It caused light snowfalls in the North-west and showers in Ontario, as a rule light. No. 8 formed on the 19th in the Western States. Its ultimate course is doubtful, but the area was noticeable for the fall of snow which it occasioned in Manitoba on the 19th and 20th. No. 9 was a depression of considerable importance when over the northwestern portion of the continent between the 25th and 27th, the barometer reduced to sea level falling to 28:80 inches. The area however did not extend further east than Lake Superior and it seemingly passed to Hudson Bay. During its presence in the North-west thunderstorms were experienced at first, followed by a change to decidedly colder weather and light snowfalls. A fall of rain also occurred over the Lake Superior Region. No. 10 was a marked depression on the morning of the 30th centered in Colorado, it having developed during the night. It travelled northeasterly and on May 1st dispersed over Lake Superior. Showers and thunderstorms were general in Ontario and Quebec on the 30th attendant apparently to a great extent on this area.

#### ATMOSPHERIC PRESSURE.

The mean atmospheric pressure was above the average from the Straits of Mackinaw east to our Atlantic Coast and below everywhere else. The greatest amount above average 0.10 of an inch occurred in southwestern New Brunswick, and the greatest amount below average was in the interior of British Columbia.

#### BRIGHT SUNSHINE.

Bright sunshine was above the average amount avail stations in Consequence opt at Boundarian was just average. The two extreme portions of Canada gave the largest are averaged to eaverage the largest are averaged.

#### TEMPERATURE.

The mean temperature of the month was above average in the Domini 1 of there east of a arrow of north and south through Winnipeg, and below average everywhere to the west and the greatest extractions of Ontario, and the greatest departure below erige of awas in Alberta, and the more western parts of Saskatchewan and Assinibola. The temperature was lecidedly below average for the first ten days in all districts between the Great. Lakes and the Maritime Provinces, then abnormally high temperature became prevalent, and during the last few days summer-like conditions obtained. In the Northwest Territories the month closed cold and disagreeable, and show was rejected in many localities. The following are the highest and lowest temperatures recorded in each province during April, 1890;—

British Columbia	. 83	·0 on	27th at	Que-nelle.	Ü	o on	1-t at	Barkerville.
North-west Territories	.74	1 on	26th at	Medicine Hat.	24	Olon	lst at	Qu'Appehe.
Manitoba	.81	·0 on	27th at	Emerson.	12	$\sim \mathrm{on}$	6th at	Winnipeg.
Ontario	>8	·0 on	30th at					
Quebec	82	·0 on	30th at	Montreal.	1	· · · · · n	5th at	Brome.
New Brunswick	.81	7 on	30th at	Fredericton.	11	0.00	7th at	Dalhousie.
Nova Scotia	.78	·4 on	30th at	Picton.	16	Con	1st at	Parrsboro.
Prince Edward Island	.70	·6 on	25th at	Charlottetown.	18	5 on	7th at	Hamilton.

#### PRECIPITATION

The precipitation was less than average throughout the Dominion, except in Eastern Manitoba and north of Lake Superior, and perhaps on Vancouver Island. Rain was needed in South-western Ontario, and on the North-western prairie lands, but elsewhere the ground has been well watered by melting snow and thundershowers.

#### WINDS.

In British Columbia the westerly winds were the most prevalent, and although for the most part they were fresh to strong, there were no gales recorded. One moderate and three strong gales occurred in the North-west, the most prevalent wind being also westerly. There were several strong winds in Manitoba, but only one moderate gale was recorded, and here also the greater number of winds were westerly. In Ontario winds were as a rule moderate, the force of a moderate gale being attained only once during the month and there were numerous variable winds and calms. The winds were about equally divided between the easterly and the westerly. In Quebec the westerly was the most prevalent wind and whilst they were often fresh, a moderate gale was only recorded twice. In the Maritime Provinces there was one fresh and one strong gale and the westerly were the most numerous winds. Warnings were sent out twice during the month to stations in the Maritime Provinces where navigation was open, on the 7th for a moderate gale, a moderate gale occurring on the 8th and 9th; and again on the 16th for a strong gale, a heavy gale prevailing on the 17th and 18th.

# OF CANADA, APRIL, 1899. THE DOMINION \* Stations not furnished with Registering Thermometers STATIONS IN $\Lambda T$ PRESSURE, TEMPERATURE, WIND AND PRECIPITATION

Barometer not reduced to Sea Lovel

= = ==== 0000 | Zer of Fogs.  $\circ\circ\circ\circ\eta\circ\circ\circ\circ$ --=== Ξ 222 = = - - -80888848 ---. . . . Surady rabundTheory ----2-22 === Ξ . . . . 2100 ....... . . . --isotomy joing =1-25 2 contributed to 20% =04825485 E-484-145 === 2523 2223 . ភនិតតតតិនិង 213.33 213.33 Lovewith of or more 5322 44268883483 442688834834 9335555 0000000 128155495 85 m 2284 12845 264 Heat isstrict. 11 a 30 a PERFITATION. 6-00 ---.5.59 (F111 osumay 11917 : 1 9099799 977 Diff. reveefrom នាងនឹក គេត្ 288443B .558 778 --------Sections Sections Sections 1 25 x 3 11 x x anorthopies VELOCITY OF W. 90.00 s'ynb denys Telocity, នតវិតម្លង 20 anou and solin unity total number of hours. 8 Ş გგგგგნაგ (8 09 : 0 ,T := 222808552 G F-27223 3 Z. W. 2 c 8 2 c - 2 8 3 14. 5 661-331001103801  $^{\prime}$   $^{\prime}$ 90 프아오프로마중마 ~ PRECTON 23 . 9 '3 'S ÷... രസ്ത്യപകയിച Ε. 0100 E-G-4-9-4 N' E' -٠٪ telz elumbed, 1×10 +1010 00 00 Mean relative 28 : : -nn Mean reinferature of 7 Ξ, F1106 ាដពេល 292878491 245973291 6.71 09.7 5118 5118 Theb ared 93 2522228 25122222233 848 1--2-526-2 11- E :3312 .ala(I ------3455 9100 . C 10 10 10 ៖ គឺ ខិតិតំចំពស់ពេធ 180407 888 5885 S=04=1-85 5. 675878878878 . 5 7 16.5 588 ិត្តក្រុក <sup>ខេ</sup>ត្ត ុតនេកស កឥតិតិសិត្តិសិត្តិ 888 x H v H D D v L v C D D v C D .. 5 68 g 4 65 g 0 = 0; 13 5 23 6 6 8 8 000 Highest. 09 : 218855 2111 #F6888488 2158 Tests obsetct 0103.700100 02007788 10 7 āçıka. 20 1001 - 211 - 00 Homarage. specime p တ်သက္သည်သူမှတ်ထိ pilgerense 111. T 1 2790000000 2459499899 111 111 71 KX015 X MC+ 110 0.0 10.00 meak 1944 : 5 4482448 1:3 425 :=43# 22.1 19 n. | na. 560 ss 940 95 7844488 75558888 777777 PRESCURE. ,189W0.I 8.5 ลิสสสสสส 일육공장육읍종 Highest. 8888888 8855388 Alenn reduced. ã, ลลลลลล Elevation above Sea Level, in feet. ARKARAN TANGKALIKAHAN TANAK TANAK TANGKAN TANG #844:1089#### Longitude W. Latitude V. · 목욕류를 무대를 찍을 욕망하다다다면 등을 목욕을 모르는 방콕 목록 8.8.5.5.6.8.8.8.6.6.8.8.9.9 Aggistrat
Aggistrat
Port Simpson
France & Hage
France & Ha N.-W. Therefores S. Medicine He Education Series Control of Armel College College Series Abert Dentition College Colle Puncan's Vancouver Nel-ou. Kel-wha. NOITELS SRITISH COLUMBIA:

#=== 0 C0 00 00		norma caemisino de contrata en
140 AS 'H 'GS GA' HSHB Q GS S 'GS		пососо маналитен — и манале 11 — почасн
88888 A FR 35 A	25 28 28 2 28 2 2 2 2 2 2 2 2 2 2 2 2 2	田 新名音社 日前町21両日村前町   1 MASSAMI   1 MASS
28: 25: 88 : 8: 8: 8: 8: 8: 8: 8: 8: 8: 8: 8:	대전 <b>로 많았던만</b> (충분으로 등	- 5 (SSS (XESS)594,0290 & Needs)697 U
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		9
+ +++++++++++++++++++++++++++++++++++++	1 11 11 11 1	7 : 1965 : 1986 - 1788   16 - 17   1976 - 1777 - 18   18   18   18   18   18   18   18
11.5 0.00 11.15 0.00 0.00 0.00 0.00 0.00	2014 H200 H244 0	# 61448 RMR4882228644
	1: N.W. 1: N.W. 1: S. N.W.	X
	a	
988 8 88 8 640 0 0 10 0	8   88   88   8	ବ୍ୟଞ୍ଚଳର ପ୍ରଥିତ ବ୍ୟକ୍ତ : : - : ଜଣର (୫୯୧ମୁନ୍ତ : ର : .୫ .୯)
822 2 0.0 1 1 2	=======================================	Stageste Bridgereesee : 1 - Sag enegate ie ie e
#### 0 : 90 F		282 - 12 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -
	40 : 0 : 44 : 69 : 1 : 6	50254 SEEDEROUS : 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	6	
<u>∞610</u> ∞ 01− 1	20 0 87- 7-13 1	900 / 20   10   20   20   20   20   20   20
E 6100 61 :010		
≪1-00 ™ 21⊙ 01	- m-   =  Slm   mEl	
m ⊕ ⊇ − 1 = 0 = 0	-1 60 E3- 19 E3-	2007 PAN 1655 # # # 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	m	ි කිලවල වෙන් විසිය කිරීම ක කිරීම කිරීම කි
	- All History History	
<u> </u>		8   \$
100 0 00 10 mg		##WESSESSESSESSESSESSESSESSESSESSESSESSESS
927	11111111 111 1 200-2011 4x2 2	지역
ଅଧ୍ୟାଧ୍ୟ : 'ଜନ :ଶ୍ୟ :ଅଥ	តិកិត្តិតិតិតិតិ ឯកកំន	ពស់អំពីសាស សំនាន់មាស្ត្រនាសាសនានានា ន នេះនេះសម្រាស់ មានស្ថិតនាសាសនានានា ន គេស្ថិតនាសាស
2000 10 10 10 10 10 10 10 10 10 10 10 10	884444 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	00/000
1-9001 0 · + 61	_ \$85754BBB 9555 _ 3	Action (477777747777 ) 777797777777 (777777) Action of Signal Edition of Signal Signal Consideration (4777777) Homeon (47777777) (477777) (4777777777) (47777777777
\$4.00 80 PL 01 1	1 11111 111 11 100 100 100 100 100 100	
용표했는 경 : 왕편 왕의 영원	55 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	SARSSEQ (QSCASSEASSECT )3 (ASCASSECTE ) (SSCASSECT)
		· · · · · · · · · · · · · · · · · · ·
	#52	
	목본는 문문 문문 등록 기유의 문 기급 등	- 최 1 1 1 1 1 1 1 1 1 1 2 2 3 3 3 3 3 3 3 3
	- 19 전 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	20 1 20 20 20 20 20 20 20 20 20 20 20 20 20
25.25 25 25 25 25 25 25 25 25 25 25 25 25 2		· 중 111 1 1 3 중요용은 115 11 11 11 11 11 11 11 11 11 11 18 중요 () 1 1 1 1 15 15 16 17 1
250423=255=525F005=6	888 135 1126 135 156 158 158 158 158 158 158 158 158 158 158	The state of the s
프림의원은일만인원관리하는까요하	9688 <b>28</b> 2526889	- 市場合がは高泉とは日本の名がは高いには、日本の本では、日本の本のは、日本の本では、 ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・
25255525252555 27722755 27722755	2855848484848484848484848484848484848484	집100회중요한1일요중청소요항공원유기요요가소%하다 100年4년으로만인이었다. 요요소소소소중소주로교육학부부부부부분 100호수학교육원업업대학교육교육교육
S S S S S S S S S S S S S S S S S S S		
mor mor	rie Lie	
end. on M on M reek trung son.	s (Aweme) s (Areme) Prairie iland	
-W. TERRITORIES—Con. Regina Indian Head. Continuon Manor Narrow Indian Leed. Indian	edos; inceptos;	All Markers and the Markers an
NW. Territories—Con- Region Itend Countington Manor Macleod Marched Tarrow Tarrow Tarrow Machine To the Creek To the Cre	MATTORIA MINITEDER MINITED	Markenson Marken
24	Z. g. gudony gamaa (	SEAN NOT ENDARMONE COURSE AND COURT AND SEAT SEAT SEA

PRESSURE, TEMPERATURE, VAND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, APRIL, 1899.

a. Barometer not reduced to Sea Level. "Stations not furnished with Registering Thermometers.

1		No. of Fogs.	סן פאומסטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטט
	SIL	Assistant to ox     No. of Thundsto	1 000000000000000 0000000 0 00 00000000
		Soultain to of	h hasasanatatasas essame a sa en en eatasana essambs fin a
	arour	Days with of an	n megagenterarina koneng a ar ar garinahin ana a
-	×	Heaviest fall in	- 후 : 하고 주변 생물 영화 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
	YATI	tomicay mon	
	PITATION	oanatoffid	
-	PRE	Апочис	8: 14: 62 (22/13 624825555)
	WIND	ib ban and di- mort noitear	20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
-	3	Teloeity.	
- 1	TI	s'yab tsadanH	The state of the s
	VELOCITY	Mean miles per hour.	
		sinon to	୍ରୀ ଅନୁ । ଅନ୍ତର୍ଗ ଓ ଅନ୍ତର୍ଗ ଅନ୍ତର ଅନ୍ତ
		Total number	
		ίς,	는 사람들은 사람들이 되었다. 그는 사람들이 되었다면 하는 사람들이 되었다. 그런 그런 그런 그런 그런 그는 사람들이 모든 어디를 받는다. 
lan.	BON	.W.V	
H I	0 K	11.	
	Ě	S.W.	
-	N 0	.8	
3 {	DIRECTION OF WIND FROM	'3'S	HITTHE CONTROL OF THE
23	OTES	E	[ [ ] [ [ 구축 : :: " ] : " ] : " [ ] ( [ 4 ] ) [ 4 ] ( [ 4 ] ) [ 5 ] ( [ 4 ] ) [ 5 ] ( [ 4 ] ) [ 6 ] ( [ 4 ]
		N.E.	* 조고 : : : : : : : : : : : : : : : : : :
N I		Z·	
Sued		ly clouded,	
		Xo, of days con	
3	$\mathfrak{f}_0 = \mathfrak{f}$	Мена в топп	
200	-nH	Mean relative	
	lo si	Mean temperatu Demperatu	
č		Меви двіју	1   1   1   1   1   2848572   294857   24   24   24   26   26   26   26   26
<u>.</u>		Date	# HAALANDELOCA HAAHRING C DO CO DOCUMENTO CONTROL CONT
24.50		i	2 · · 21-22702090-2-0012   22 22 22 22 22 22 22 22 22 22 22 22
200	E .	Lowest.	Set to a superpendent and the set of the set
Ē	Temperature.	.etted	#
550	PE	Highest.	0, 0000000000000000000000000000000000
3	TES	Tears observt.	න් පිරිවිත්වරයිය සිට
Ĭ		Difference trom average.	" a
eter		i	ေရး ျဖစ္ပြားစာအစေလးအပြဲအေလာက္ေပါက္ေတြကုိ ေတြမွာ ျမစ္ခ်ျပဳေတြကေတာ့ ေတြမေျခတယ္မေတာ့ ေတြမွာ
Laron		Mean.	[ 호] 영영당당학교육학교부의 교육 ( 호구 보고
, E		Range	
1	20 20	Lowest.	
	PRESSURE	Highest.	[
	PR		10 10 10 10 10 10 10 10 10 10 10 10 10 1
		Mean reduced.	\$ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	10-15	Elevation above a feet in feet	TE : 188 - 1978 : 18 : 1 186 : 1 1 7 7 6 1 1 1 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Ì		.W abuttano,I	######################################
		"M admittant. I	92222224411472141114472142742274479992447999241112222222222
		Z abuitind	- 588588779508785787878787878787878787878787878 - 58858877479787878787878787878787878787878787
		×.	in i
		£.	
		ATIO	A CONTROL OF THE CONT
		STATIO	to the control of the
		STATION	and the control of th
		STATIO	Devalue

			45
= - 0			
25 0 25 0 2 12 8	នានាងការ	1 584-5 555 85 585-8 547 85	5 50 <b>3</b> 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
		요즘보존의 범위된 공급	7 93 87 8 R
±	2. 2227. 2. 2227.		9 29 20 0 2 8: Ma 8 8
ĒI : I	=	우루루구구 무현 : : :구주	9 1 1 77 7 5
e : : : : : : : : : : : : : : : : : : :	995555 (696 955555 (696		N 128 8 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
<u> </u>	SX N N N N N N N N N N N N N N N N N N N	ZZZ Z	z
E .	#####################################	324g>	2 : : : : : : : : : : : : : : : : : : :
=	2 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
_3	888688 8	88 88 8 B	8 8 88 <sub>.</sub> 8
7 :	α81ω=5± ::u		
	==3×2= : :	#2-22   ==   <del>0</del>	5 -4 -4 - 5
*::::	- 125 4 2 1 1 1 2		
2::::	3265 : 3		S = 5 = 2 =
54 i i i i	20%-Ho :::		
	# = 8 11 to 1 1 10 to	the state of the s	
	2=4250 : : :		
3	908287	프림티프	# == #× 4.50
A			
° :	00000 :::	:::::::::::::::::::::::::::::::::::::	
1111	क्लेलशिक्च : : : : : : : : : : : : : : : : : : :		72 : 0
	ক্রতিমান্দ জুলি কুলি জুলি		11.
	_ ## 1		
1 8 E	<u>15명의기술단 구단당</u> <u>15명공   공원 :</u> 보단당	2022 12 12 12 12 12 12 12 12 12 12 12 12 1	$\begin{array}{c c} g &  c_1c_2  & g \propto &  c_2c_2  \\ \overline{g} & \overline{g} \overline{g} & \overline{g} = \overline{g} \\ x &  c_2c_2  & \overline{g} \overline{g} = \overline{g} &  c_2c_2  \\ \end{array}$
, 1 9	**************************************	7 x54=0 360 .00 58445 355	n 00 00 0 - 8 24 85 2
1 · · · · · · · · · · · · · · · · · · ·	สลิก≃สิก หลัก		8 88 88 E
_ = . : H			
- E (c	788529E E88 588539 9 111 - 100000	86888 844 63 88888 782 87 88888 877 877	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
	3339-5- 4   Sections 5	######################################	5   -4   6 H
• ¥ : : ₩	5 C + 5 - 5 - 1 - 2 5	7.8825 X68 X2	க் - சக்க சிரும்
	\$5#588 <b>#</b> 58		
<u>ا نا نا ف</u>	#88.77 #00 0	48 <b>48</b>	9 : : : : : : : : : : : : : : : : : : :
<u> </u>	556 S	2722 2722 2888	8 8 1 1 8 1
ا ا ا ا ا	99 98 31 22 95 95 95 95 95 95 95 95 95 95 95 95 95	5838 : : : : : : : : : : : : : : : : : :	គឺ៖ គឺ៖!! គ
<b>a</b>	888 8	5785 : : : : : : : : : : : : : : : : : : :	9 9 9
8: ::		# 3000   \$489   88	a
- 814 / 22			
. ೧೯೯೫೯	%%\$%********* \$6\$\$6\$\$6\$	# # # # # # # # # # # # # # # # # # #	교육교육 유명성경환 유
Continued.   Con		= 52	E. Stander   E.
	Rick Haryswyck: Froderickon C'hathan G'rand Masan P'unt Leprona St. John Bullones St. Stephen St. Stephen Maneron Maneron Maneron	Mara Sentra: Filmo Franco	
Pt.		4 sg	8 8 8 9
omter [ E.	MICK nan. Penn. idge	2 7 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
. 3 8 8 5 1 € 5 1	ENS.	verta National Plend Ple	AND
QURREC—(Continued.) Abitibi Abitibi Birl Rocks Roberval	Wow Harryswick: Frederiction Chathana Chathana Chathana No. 10 Percent	Mar Severa . Sydney Sydney Franco Francoull	P. E. Casawa Consistences. Consistences. Hundren Hundren St. chuit's St. chuit's Channel Channel Maner Dead. Maner Dead. Hundren Hundr
S 4. 222	ZACCĖŽAŠZŽZ Z	S=XENTOTE XEXTE	1000m2000000000000000000000000000000000

# OBSERVATIONS AT STATIONS REPORTING RAIN, SNOW AND WEATHER, DURING APRIL, 1899.

		1	CAINEVE				Ssor	VFALL.			
STATIONS	Amount an inches.	Days 01 or Over.	No. of Fan Days.	Heaviest Fall in Month.	Date.	Amount in unches.	No. of Days.	Heaviest Fall in Month.	Date.	THUNDER OR LIGHTNING.	Remarks.
Balassu Combuland., Cumbuland., Beaver Creek Langley Nanatine Gold-Stream Lake Rwd Oak Saft Spung Island., Valdez Islander	2 75 4 56 4 83 1 72 5 95 8 22 1 54 8 76	\$ 16 13 4 16 15 7	22 14 17 26 14 15 23 14	1 50 0 95 0 83 0 81 2 94 1 38 0 54 1 10	15-16 21 11 11 11 11 12		4	-		30	
N. W. Termitolites Courts Innistal Didsbary West Beaver Hills Saltcoats	0 21 0 13 0 52 0 01	1 3	26 27 28 19 28	0 21 0 07 0 24 0 01	18 21 26 26	4 0 3 0 1 1 7 1 0 5	3 4 21 7 21	4 0 2 0 1 1 3 8 0 5	30 21 21 30 4		Blizzard on 30th Blizzard on 30th Blizzard on 30th
Manitoria Selkirk Pembona Crossing Rapol City Gretna, Morden Hattney Belmont Shool Lake, Cartwinght OnlJsunk Cartwinght (2 Greenwood) Beaver Crock Elem Delocatin, Norghay Turthe Mountain	1 25 0 30 0 91 0 10 0 17 0 87 1 60 2 35 1 64 0 42 1 64 0 42 1 64 0 45	21 1 1 2 3 1 3 4 4 2 3 4 3 4 3 3 4 3 3 4 3 3 4 3 4 3	25 52 52 52 52 52 52 52 52 52 52 52 52 5	0 65 9 80 0 50 0 48 0 05 0 25 0 51 0 52 0 64 1 72 0 41 1 01 0 19 0 30 0 30	23 26 27 19 19 26 26 26 26 26 26 26 26 27	3 0 13 0 2 0 3 3 3 10 0 5 0 7 0 9 0 8 0 6 6 4 0 3 5 11 0 12 0	8 6 2) 6 (4.1) 8 2) 4 (4.3) 1 (4.5) 5 3	3 0 11 0 2 0 7 0 4 0 7 0 4 0 7 0 4 0 6 0 3 5 2 0 6 0 12 0	19 20 5:21 17 20:21 20 20 19 4 20 26 19 20 19:20	23, 26 25, 26 26 26 24, 26 24, 26 26 26 26 26 26 26 26 26 26 26 26 26 2	River clear of ice. 22nd
ONTARIO— Midland Ursic. Cherry Valley Croydon Providence Esy Emissinete. Wigation Princeton. Lion's Head Kitley Olivor's Ferry Thompson Deer Park Huntsylle. Coldstream Wattord Orangewille Fort Britwell Mostagne Elgun Lansdown Mendad Princeton. Wyoning. Wyoning. Wyoning. Witon Grace Landowh Singhine Roblin's Mills Aurora Portion Coorgetown Linsdade Coorgetown Lindade Coorge	1 52 0 97 0 99 1 49 1 177 0 45 0 45 0 45 0 45 0 45 0 45 0 45 0 45	8	=======================================	0.50 0.32 0.37 0.37 0.37 0.36 0.46 0.46 0.10 0.15 0.72 0.63 0.37 0.37 0.47 0.47 0.40 0.47 0.47	30 14 22 × 14 14 4 30 11 18 8 8 14 22 11 9 8 17 9 8 8 8 8 11 11 12 11 11 11 11 11 11 11 11 11 11	1005 1005 1005 1005 1005 1005 1005 1005	3 2 2 1 1 2 3 3 3 4 1 1 1 4 4 1 1 1 3 3 2 2 5 1 4 4 1 1 1 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3	200 05 05 20 30 30 35 45 25 26 27 05 10	16 5 16 5 16 15	13, 30 36 29 11, 22, 29, 30 11, 13, 14, 30 12 14 11 11, 13, 14 11 11, 13, 14 13, 30 11, 30 11, 24, 26 13, 30 11, 14, 30 14, 30 14, 30 14, 30 14	50
New Bittinswick Point Escuminae.	0.11	1	25	0.11	17	0.7	4	0.5	13		
Nova Scotia Port Momen	2.31	5	25	0.84	12						
P. E. ISLAND Mount Stewart . Port Hill Murray River.	2 07 H 22 2 86	3 2 5	27 25 25	0 93 0 29 0 75	17 17 8	3 0	3	1.5	12		

#### Thunder recorded on :-

- L. Bermuda.
- 3. Quesnelle Forks.
- 5. Bermuda.
- 10. Regina.
- 11. Coldstream, Orangeville, Wilton Grove, Sunshine, Scarboro, Stony Creek, Paris, Point Clark, St. George, Welland, Erasmus, Hamilton, Sarnia, St. Ann's, Agincourt, Birnam, Lucknow, Niagara, Brantford, Providence Bay, Wiarton, Princeton, Guelph, London, Stratford, Battleford, St. Mary's.
  - 12. Dalhousie Mills, Otomabee, Kitley, Sayanne, Brome.
- 13. Paris, Point Clark, Whiteside, Erasmus, Lakefield, Bruce Mines, Agincourt, Peterborough, Meaford, Lucknow, Haliburton, Niagara, Stouffville, Brome, Midland, Wiarton, Lion's Head, Orangeville, Jermyn, Wooler, Aurora, Scarboro, Coldwater, Gravenhurst, Durham, Lindsay, Saugeen, Haileybury, Barrie.
- 14. Point Clark, White-life, Cockburn Island, Lakefield, Hamilton, Bruce Mines, Beatrice, Bancroft, Uplands, St. Ann's, Peterborough, Meaford, Lucknow, Haliburton, Brantford, Lion's Head, Midland, Wiarton, Orangeville, Jermyn, Wilton Grove, Scarboro, Arden, Coldwater, London, Gravenhurst, Durham, Lindsay, White River, Parry Sound, Sangeen, Port Stanley, Halleybury, Barrie.
  - 16. Bognor, Bermuda.
  - 19. Red Deer.
  - 21. Cockburn Island, N. Nicomen, Victoria.
  - 22. Providence Bay.
  - 23. Selkirk, Pembina Crossing, Aweme. Emerson.
- 24. Stony Creek, Erasmus, Sunshine, Scarboro, Portage la Prairie, Rosebank, Gretna, Morden, Norquay, Guelph, Winnipeg.
  - 25. Scarboro, Collingwood, Barnardo, Emerson, Lindsay, Port Arthur.
- 26. Norquay, Coldwater. Elgin, Collingwood, Winnipeg, Cannington Manor. Point Clark, Sunshine, Portage la Prairie, Rosebank, Brandon, Selkirk, Pembina Crossing, Rapid City, Gretna, Morden, Hillview, Belmont, Cartwright, Oakbank, Turtle Mountain.
  - 27. Port Arthur, White River.
  - 28. Cottam, Ridgetown, Birnam, Lucknow.
- 29. Abbotsford heaviest haid for 10 years, Cockburn Island, Erasmus, Bruce Mines, Agincourt, Croydon, Providence Bay, Aweme, White River.
- 30. Langley, Paris, Point Clark, Owen Sound, Windsor, Cockburn Island, Erasmus, Otonabee, Agincourt, Port Hope, Sprucedale, Meaford, Birnam, Lucknow, Niagara, Dalhousie Mills, Hamilton, Bruce Mines, Collingwood, Beatrice, Bancroft, Uplands, Stoufiville, Midland, Cherry Valley, Ennismore, Wiarton, Lion's Head, Thompson, Wooler, Wilton Grove, Aurora, Emsdale, Chatham, Collingwood, Montreal, Woodstock, Saugeen, Coldwater, Gravenhurst, London, Durham, Lindsay, Stratford, Bermuda, Parry Sound, Port Stanley, Quebec, Haileybury, St. Mary's, Barrie.

#### Aurora recorded-

Where the class of aurora is noted by the observer, it is given, (1) being the brightest, (IV) the field st in brilliancy.

- I. Pembina Crossing, III: Cannington Manor, IV; Savanne, Regina, II.
- Hillview, IV: Duck Lake, III: Cannington Manor, IV: Red Deer, IV: Savanne, Regina, IV: Haileybury, IV.
  - 3. Pembina Crossing, III: Hillview, IV: Beatrice, IV: Regina, II: Quebec, IV: Hailevbury, II: Oonikup.
- 4. Georgetown, IV : Chicoutimi, Cockburn Island, Erasmus, W. Beaver Hills, IV : Gatesgarth, Red Deer, IV ; Regina, III ; Barnardo, II : Coldwater, II : Quebec, IV ; Haileybury, IV : Oonikup.
  - 5. Cannington Manor, IV : Qu'Appelle, Father Point, IV : Haileybury, IV.
- Awene, IV; Pembina Crossing, III; Hillview, I; Cockburn Island, W. Beaver Hills, IV; Red Deer, IV; Cape Magdalen, Sayanne, Regina, III; Truro, IV; Qu'Appelle, Quebec, IV; Father Point, IV.
- 7. Pembina Crossing, III: Duck Lake, Savanne, Regina, IV: Truro, IV: Qu'Appelle, Swift Current IV: Father Point, III.
  - 8. Pembina Crossing, IV
- Pembina Crossing, III. Cockburn Island, Birnam III.; W. Beaver Hills, III.; Calgary, III.; Red Deer, II.; Sayanne, Coldwater, II.; Swift Current, IV.; Medicine Hat, II.; Quebec, IV.; Haileybury, IV.; Barrie.
- Pembina Crossing, III: Chicoutimi, Bancroft, IV: Cannington Manor, IV: Sussex. Truro. III:
   Minnedosa II; Swift Current, IV: Quebec, IV: Channel Island, IV.
  - II. Pembina Crossing, III: Cannington Manor, II; Regina, III: Father Point. III.

- 12. Minnedosa, III; Haileybury, III.
- 15. Pembina Crossing, IV; Portage la Prairie, Hillview, II; Haileybury, IV; Channel Island, IV.
- 16. Minnedosa, 111.
- 18. Cape Magdalen.
- 19. Red Deer, II; Sussex, Yarmouth, IV.
- 20. Truro, IV.
- 21. Pembina Crossing, IV.
- 23. Emerson.
- 24. Pembina Crossing, III: Treherne, Hillview, II: W. Beaver Hills, III; Calgary, III: Duck Lake, III: Barnardo, IV: Battleford, III: Quebec, III: Channel Island, IV.
  - 25. Treherne, Stony Mountain, 1V; Minnedosa, IV,
  - 27. Pembina Crossing, IV.
  - 28. Channel Island, IV.
- 29. Aweme, III: Pembina Crossing, II: Treherne, Portage la Prairie, II; Hillview, I; Cannington Manor, II: Red Deer, IV: Barnardo, II: Channel Island, IV.
  - 30. Minnedosa, 111.

Appearance of spring birds, &c.

Swallows.—Ursa, 22nd; Gatesgarth, 19th; Beaver Creek, B.C., 2nd; Abitibi, 30th; N. Nicomen, 28th; Haileybury, 28th; Ridgetown, 19th; Bognor, 30th; Erasmus, 19th; Lakefield, 15th; Bancroft, 19th; St. Ann's, 27th; Port Hope, 14th; Peterborough, 15th; Sprucedale, 27th; Lucknow, 24th; Ursa, 22nd; Georgetown, 13th; Gravenhurst, 25th; Port Stanley, 19th.

Robins.—Ursa, 12th: Providence Bay, 6th; Princeton, 1st; Dalhousie, 16th; Donald, 6th; Gatesgarth, 16th; St. Stephen, 9th; Summerside, 15th; Brome, 8th; Bognor, 7th; Cockburn Island, 13th; Erasmus, 4th; Hamilton, 8th; Collingwood, 6th; Kinmount, 6th; Agincourt, 6th; Port Hope, 4th; Sprucedale, 11th; Lucknow, 1st; Pembina Crossing, 13th; Thompson, 12th; Montague, 5th; Jermyn, 6th; Emsdale, 13th; Arden, 7th; Fredericton, 23rd; Gravenhurst, 10th; Haileybury, 12th; Barrie, 7th; Oonikup, 23rd.

Blue Birds.—Donald, 9th; Chaplin, 6th; Welland, 24th; Erasmus, 10th; Georgetown, 6th; Arden, 7th. Whippoor Will.—Clontarf, 29th; Erasmus, 28th.

Black Birds.—Midland, 16th; Princeton, 16th; Kitley, 5th; Gatesgarth, 19th; Coutts, 12th; Paris, 9th; Clontarf, 12th; Ridgetown; Welland, 7th; Bognor, 10th; Erasmus, 10th; Bancroft, 11th; Port Hope, 8th; Peterborough, 8th; Pembina Crossing, 17th; Rosebank, 21st; Georgetown, 9th; Arden, 1st; Fredericton, 16th; Emerson, 13th; Oonikup, 24th.

Wild Ducks.—Chaplin, 7th; Gatesgarth, 9th; Cannington Manor, 8th; Cartwright, 12th; Norquay, 10th; Bognor, 1st; Pembina Crossing, 10th; Gretna, 9th; Hillview, 11th; Barnardo, 12th; Rosebank, 11th; Portage la Prairie, 11th; Thompson, 2nd; Ardén, 13th.

Gerse,—Donald, I6th; Moose Jaw, 4th; Duck Lake, 5th; Chaplin, 7th; Gatesgarth, 10th; Cannington Manor, 9th; W. Beaver Hills, 14th; St. Stephen, 10th; Aweme, 9th; Cartwright, 14th; Coldwater, 12th; Norquay, 9th; Regina, 9th; Pembina Crossing, 10th; Gretna, 9th; Morden, 13th; Hillview, 12th; Barnardo, 10th; Oak Lake, 8th; Rosebank, 8th; Portage la Prairie, 10th; Thompson, 13th; Montague, 5th; Wyoming, 14th; Erasmus, 9th; Oonikup, 11th.

Crows. Duck Lake, 10th; Aweme, 1st; Rapid City, 6th; Hillview, 16th; Barnardo, 6th; Rosebank, 2nd; Portage la Prairie, 6th; Savanne, 3rd; Regina, 12th; Emerson, 2nd.

Humming hirds.—N. Nicomen, 17th.

Gulls.—Abitibi, 18th; Lakefield, 1st; Uplands, 8th; Pembina Crossing, 19th; Gravenhurst, 11th.

Meadow Larks.—Aweme, 10th; Cartwright, 10th; Welland, 28th; Lakefield, 22nd; Port Hope, 10th; Lucknow, 10th; Pembina Crossing, 12th; Gretna, 8th; Meadow Lark, 16th; Portage la Prairie, 17th.

Frogs.—Midland, 23rd; Princeton, 12th; Gatesgarth, 20th; Cannington Manor, 12th; Stony Creek, 18th; Paris, 12th; Sammerside, 30th; Cartwright, 18th; Coldwater, 16th; Clontarf, 28th; Whiteside, 20th; Welland, 18th; Bognor, 21st; Erasmus, 7th; Beatrice, 18th; Bancroft, 23rd; St. Ann's, 4th; Agincourt, 20th; Meaford, 19th; Lucknow, 5th; Niagara, 13th; Pembina Crossing, 23rd; Hillview, 14th; Barnardo, 22nd; Rosebank, 10th; Portage la Prairie, 11th; Savanne, 22nd; Huntsville, 22nd; Wyoming, 13th; Sunshine, 19th; Scarboro, 17th; Truro, 15th; Georgetown, 14th; Emsdale, 23rd; Fredericton, 24th; Emerson, 12th; Gravenhurst, 18th; Stratford, 17th; Haileybury, 28th; Barrie, 24th; Oonikup, 25th.

# PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF APRIL, 1899.

		Hours Ending														
	- 5 a.m.	6 a.m.	- a.m.	s a.m.	9 a m.	10 a.m.	П а.ш.	Noon.	1 12.10.	Timed at	3 p.m.	H Parin	Turk c	6 pan.	7 Jeans	i d
Victoria		0.01	0.17	0.34	0 4ri	0.53	0.59	0.62	0.69	0.04	0.58	0.55	0.54	() 4()	0.12	
Kuper Island																
Agassiz, B.C.		0.00	0.06	0.10	0.24	0.33	0.28	0.33	0.37	0.36	0.28	0.23	0.15	0.09	0.00	
Battleford	0.10	0.38	0.35	0.45	0.53	0.57	0.61	0.65	0.66	0.61	0.62	0.57	0.48	0.37	0.17	
Indian Head		0.00	0.02	0.50	0.46	0.52	0.56	0.61	0.59	0.62	0.60	0.61	0.52	0.28	0.00	
Brandon		0.00	0.28	0.42	0.56	0.63	0.69	0.70	0.68	0.68	(1-(3)	0.55	0.39	0.24	0.007	
Winnipeg		0.11	0.22	0.39	0.57	0.67	0.63	0.67	0.69	0.70	0.65	0.61	0.63	0.49	0.08	
Durham		0.00	0.05	0.20	0.45	0.51	0.53	0.55	0.54	0.54	0.53	0.52	0.36	0-23	0.04	
Woodstock		0.00	0.10	0.39	0 63	0.60	0.63	0.67	0.63	0.66	0.67	0.59	0.58	0/37	0.01	
Toronto		0 00	0.25	0.53	0-61	0 63	0.65	0.66	0 68	0.69	0-65	0.63	0.59	0.57	0.21	
Lindsay		0.06	0.40	0.44	0153	0.55	0.67	0.72	0.69	0.72	0.66	0.54	0.51	0.44	0.25	
Barrie		0.00	0.28	0.47	0.57	0.65	0.73	0.68	0.72	0.69	0.64	0 64	0.63	0.57	0.11	
Kingston		0-05	0.44	0.72	0.75	0.73	0.70	0.63	0.63	0.60	0.63	0.62	0.59	0.35	0.00	
Ottawa		0.06	0.37	0 61	0 68	0.70	0.70	0.73	0.6	0.63	0.63	0.68	0 65	0.44	0.08	
Montreal		0.01	0.36	0.57	0 62	0.71	0.78	0.76	0.77	0.70	0.66	0.69	0 60	0.23	0.00	
Fredericton	0.07	0.50	0.56	0.61	0-65	0.76	0.76	0.79	0.76	0.81	0.80	0.71	0.59	0/21	0.00	
				-	,								1		-	
	Vietoria.	Kuper Island.	Agassiz.	Battleford.	Indian Head.	Brandon.	Winnipeg.	Purham.	Woodstock.	Toronto.	Landsay.	Barrie.	Kingston.	Office in.	Montreal.	Fredericton.
Mean proportion for month (Constant sunshine being 1.)	0 46							0.37					0.55	0.56		
Difference from average	+ 11			0.00			i () {		1 06			- 11	09		: 11	- 16
Maximum daily amount	0.90			0.95	0.76	0 89	0.92	0 80	0.79	0.91	0.98	0.92		0.92	0.93	0.95
Date.,	23		23	15	11	1	6	12	.5	.5	10	1	5	24	24	ti
No. of days completely clouded	1		10	. 1	4	5	-1	11	2	1	1	3	3	1	3	2

#### APRIL FORECASTS.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 840. These were divided as follows:—

			No.	Verified.					
	District,			No. Fully	No. Partly	No. Not	Percentage		
Manitoba			87	60	20	5	81-6		
Lake Superior			86	59	21	6	80-8		
Lower Lake Region			108	80	19	9	80-9		
Georgian Bay			105	8.7	13	7	87 2		
Ottawa Valley			92	67	11	14	78:8		
Upper St. Lawrence			90	(57	14	Ð	82.2		
Lower St. Lawrence			88	71	7	7	88:1		
Gulf			89	70	13	6	86 0		
Maritime Provinces .			95	73	18	4	86.3		
Total			840	635	138	67	83.8		

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

#### OBSERVATIONS AT MARTIN'S FALLS, 1898.

Latitude N. 51-30'. Longitude W. 86-30'. Height, - feet.

	ME	× Pres	SURE AT	32 .				Precipitation.				
	9 a.m.	2 p.m.	7 p.m.	Mean.	9 a.m.	2 p.m.	7 p.m.	Mean Max.	Mean Min.	Monthly Mean.	Total Amount.	Depth of Snow.
	in.	in.	in.	111.						U	in.	in.
January	20 25	29-25	29-27	29-257	- 7.1	2.8	3.6	5.5	18.7	- 6 60	0.79	7:9
February	29 11	29-38	29 40	29 397	4.4	4 6	1.0	6.4	17:0	- 5 30	1:00	10-0
March	29 29	29-26	29.30	29 283	9.6	19.3	9.6	20-9	2.5	11.70	0.95	9.5
April	29 38	29.34	29 40	29 373	85.5	13.5	36-0	46-1	16-8	31 45	0.05	0.5
May	29-26	29 22	29-21	29 230	48 0	57.5	50.6	60-4	3513	47 85	1 10	0.6
June.	29, 25	29-21	20 22	29 227	55 0	63.9	56.9	66.7	39.9	53-30	0.55	
July.												
August	29-20	29 19	29 49	29 193	57.9	66-4	58.2	69.0	45 6	57-30	1 52	-
September.	29 15	29 12	29 11	29 127	48.5	56.3	50.9	57 s	40:3	49 05	1 14	
October	29.33	29 32	29.33	29 327	32.5	38-9	33.9	10.1	26 1	33 10	1 06	4 1
November .	29: 20	29.48	29.18	29 187	17.5	22 2	18:0	23-1	9.7	16 40	2 17	21:7
December	29 11	29 09	29 13	29 110	- 0.1	6.6	1.2	7.4	- 86	- 0 60	0.35	3.5

#### OBSERVATIONS AT NORWAY HOUSE, N. W. TERRITORIES, 1898-99.

Latitude, N. 53° 58′. Longitude, W. 97° 52′. Height 730 feet.

	Mean Pressure at 32.			MEAN TEMPERATURE.					Precionation.		
	S a.m.	6,20 p.m	Mean.		6.28 p.m	Mean Max.	Me m Min.	Monthly Mean.	Total Amount.	Depth of	
	in.	in.	in.						111.	in.	
January	29:10	29-05	29 090	10-6	-5.3	4.8	17 1	6 15	0.77	7 7	
February	29-28	29 - 28	29 280	8.5	-3 3	1.0	16-6	-6 30	0.59	5.9	
March	29 21	29 20	29-205	1.9	12 4	19.8	- 7.9	5.95	0.69	6.9	
April	29-21	29 19	29-200	32.5	38-6	44.9	21-1	33-00	i) <u>1</u> G	0.3	
May	29 17	29 13	29 150	48 6	55 0	64-4	35.9	50-15	0.22		
June	29 06	29: 05	29 055	52-9	57.7	66.0	43 %	54 90	1 21		
July	29 06	29 05	29-055	62 4	66.7	73 1	51.4	62 40	1 33		
August	29:05	29 07	29 075	59/2	62-0	67.3	51-6	59 45	5.38		
September	28 98	25 98	28/970	49.7	52.7	60.0	42 ×	51 40	2.58		
October	29:18	29 16	29-170	29 6	32 0	37 S	25.8	31.80	0.90	5.9	
November	29:07	29 69	29 080	8.3	10/3	18.7	1.5	10:10	1 48	14 8	
December	29:07	29 09	29 080	-2 9	- 03	8.9	- 10/9	-1 00	0.83	s 3	
1899.											
January,	29 13	29 12	29-125	16 8	-13 1	- 5 0	26.7	-15 85	0.33	3 3	
February	29 13	29 13	29-130	21.4	-11 1	-3.9	-24.5	-14 20	0.71	7 1	

#### OBSERVATIONS AT FORT CHURCHILL, HUDSON BAY, 1898.

Latitude, N. 48-51'. Longitude, W. 94° 10'. Height, 38 feet.

	M	EAN PRE-	STRE AT	32-,		2		PRECIPITATION.				
	6 a.m.	2 p.m.	10 p.m.	Mean.	6 a.m.	2 p.m.	10 p.m.	Mean Max.	Mean. Min.	Monthly Mean.	Total 'Amount.	Depth of Snew.
	in.	in.	in.	in.	,	2					in.	ın.
January	29:94	29 92	29 94	29-933	-25:7	21-1	-24 9	-14 0	-32.9	-23 45	0.30	3.0
February	30-16	30-16	30-15	30 157	-19-2	13 I	-16 3	- > 3	-27.7	-18 00	] (16)	10 00
$\mathbf{March}\dots\dots\dots$	30 06	30-65	30106	30-057	-18 3	-5 O	-11 7	1.5	-23 3	~ 10.90	0.80	8.0
April	29 96	29 95	29 94	29 950	21 2	31 2	24.5	35 4	17 0	26 20	1 23	11.9
May	29:99	29197	29 97	29 977	31.2	38-3	31 0	45-4	25.3	35 35	1 20	1.0
June	29.85	29/84	29/85	29:847	42-4	49 4	42.8	59-2	33.9	46.55	0.88	5.5
July	29.74	29.76	29.72	29 740	52.5	58 4	52-2	67 2	30 4	48 80	1.09	
August	29 80	29, 79	29.79	29 793	50-4	56.4	49-4	65-6	33-3	49-45	1.35	
September	29.76	29.76	29:77	29 763	41 6	45.5	41 6	53 4	25-2	39-30	1.49	3.5
October	30-00	29 99	30 02	30 003	25-1	27 4	25 9	29/8	13.3	21:55	1.00	7.0
November	30:00	29-93	29 94	29 960	0.7	3.7	0.2	7.7	11-2	-3 25	0.12	9.2
December	29 85	29 87	29 85	29 867	-4 2	3.0	-6 6	8 8	- 20 0	5 60	0.57	5.7

#### OBSERVATIONS AT FORT CHIPEWYAN, 1898.

Latitude, N. 58 43'. Longitude, W. 111 10'. Height-feet.

	Мғ	an Pres	SURE AT	32.	Temperature.						Респрилиюя,		
	Sa.m.	2 p.m.	8 р.ш.	Mean.	8 p.m.	2 p.m.	s p.n.	Mean Max.	Mean Min.	Monthly Mean,	Total Amount.	Depth of Snow,	
	111.	in.	m.	111.					۰		111.	in.	
January	29 06	29-06	29 08	29 067	$-2^{-6}$	-01	2.6	4.2	$-10^{\circ}2$	3 (9)	1 00	10 0	
February	29-36	29.36	29.34	29 353	-13 1	- 6.8	-8 £	- 1.9 :	- 18 1	-10 on	0.30	3 0	
March.	29 27	29 28	29 29	29-280	4.1	12 4	6.6	15.8	-2.9	6 45	0 82	8:2	
April.	29-14	29-14	29-14	29 140	. 31-6	42.7	34-0	45-4	24 0	31.70	0.20	0.2	
May	29 13	29/12	29-12	29 123	47.8	59.9	49.3	62 - 2	39-9	51-05	0.56	2.5	
June	29-19	29/18	29 18	29 183	53 6	63-3	54.7	64.7 :	42 4	53 55	2 49	0.5	
July	20.09	29 08	29/08	29/083	62.2	68/9	59/8	71 5	50-6	61 20	1 22		
August .	29/13	29 11	29 12	29 120	59-1	65.5	56 0	68 1	48-8	58 45	3 52	-	
September .	29 09	29 08	29 09	29 087	48 0	54-9	45/8	59-3	40.5	49.90	2 19	2 5	
October	29-25	29:24	29 24	29 243	24.7	28.3	24 3	31 0	20 - 2	25 60	0.83	8.3	
November :	29 24	29 23	29-24	29 - 237	9.9	6.4	2 4	11-0	-4:6	3 20	0.70	7-0	
December .	29 11	29 12	29-15	29 127	1.2	4.1	- 0.2	9.5	-7.1	1 20	0.29	2.5	

#### OBSERVATIONS AT MOOSE FACTORY, H. B., 1898.

Latitude, N. 51 16'. Latitude, W. 80 56'. Height, 30:5 feet.

1					1							
	Мя	AN PRES	SSUBE AT	32 .				Precipitation.				
	9 a.m.	2 p.m.	7 p.m.	Mean.	9 а.н.	2 p.m.	7 p.m.	Mean Max.	Mean Min.	Monthly Mean.	Total Amount.	Depth of Snow.
	in.	in.	in.	in.		-	- 1		۰		in.	in.
Jamary	29-96	29 - 92	29-96	29 947	7 4	2.6	2.9	8-6	17 4	- 1 10		-
February	30-13	30-10	30.14	30 123	-2 s	5.1	-0.7	10-1	-15 0	-2.45		
March.	30-00	29 95	29 97	29 973	16.2	25.5	20.0	31.2	3.7	-17 45		-
April	30 mi	30 03	30-03	30-040	33 3	41.7	36-3	44.2	22 2	33 20		-
May .	29, 89	29/87	29.87	29 877	47 2	52 0	48-1	58.7	37 2	47:95	2 75	1:0
Anne	20 92	29 87	29 87	29 887	55.7	60.3	55.8	66 G	42.9	54.75	2 32	*
July .	29.86	29-85	29-85	29 853	61.9	67.4	63-2	72.7	50.5	61-60	1:97	
August	29.85	29-82	29, 82	29 830	59 2	€5.4	59.3	67/9	48-3	58 10	2 09	_
September	29.70	29.78	29.75	1 29 782	50.8	55.8	52.4	59. S	43-4	51-60	0.72	_
October .	30 04	30.00	30-02	30 020	36.5	41.7	37 1	45.4	31 1	38-25	1 42	
November	29.88	29.88	29, 90	29 887	22.4	27 6	21.9	31-4	16-6	24 00	1 22	6.5
December .	20/80	29.77	29 80	29 790	2.4	7-6	1.8	14.5	-5 3	4 60	_	_

#### VOLUNTARY ÖBSERVERS.

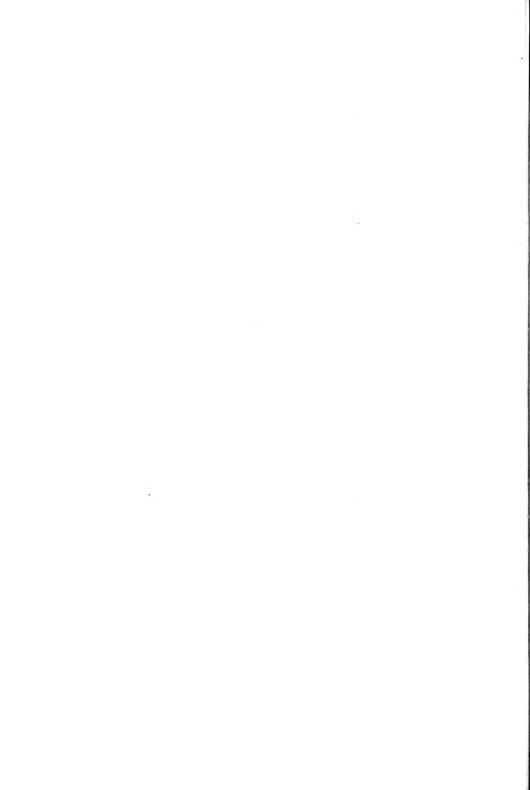
Meteorological returns from voluntary observers for 1898, even from the most remote stations in Canada, now nearly all being in, the time seems opportune for a few remarks upon the word, performed.

It would be hard to find a body of citizens who show more public spirit than the voluntary meteorlogical observer; in many cases, at the greatest inconvenience to himself, he will take at a regular set time, winter and summer, his series of observations, often foregoing other pleasures and calls upon his time in order to read his instruments at the appointed hour. In some instances these observations are taken twice or three times each day and in all weathers, after which they have to be checked and entered in their proper forms for mailing to the Central Office at Toronto. Without the aid of the voluntary observer it would be impossible to form a fair estimate of the climatic conditions of the country; and in a colony such as C mada where vast tracts are continually being opened up, a knowledge of these conditions is much sought after and is of much value to the incoming settler. The voluntary observers in Canada now number several hundred, the network of stations extending from the Atlantic to the Pacific and as far north as the Yukon District. There are many stations from which only rainfall observations are required, and although these are probably less interesting to the observer, they are extremely valuable, and the number of volunteers is continually increasing. The returns received for 1898 show undiminished interest in the work of observing and the efforts of the observers are much appreciated by the Meteorological Service.

R. F. STUPART,

Director.

METEOROLOGICAL OFFICE, TORONTO, May 26th, 1899.



### METEOROLOGICAL SERVICE, DOMINION OF CANADA.

# Monthly Tacather Review.

VOL. XXIII

MAY, 1899.

No. 5

#### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraph reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

#### REMARKS ON THE WEATHER.

The chief feature of the weather of May in Canada was the comparatively small amount of sunshine, low temperature, and heavy precipitation in the western portion of the country. These departures from the normal, however, were not very great, excepting locally in the temperature, and generally in the rainfall of the Territories. Frosts, though occurring in most districts throughout the country did comparatively little damage, and vegetation, though backward, was almost in average condition on the last day of the month.

In British Columbia, while the precipitation was almost normal there was much exceptionally cold dull weather, more especially during the first half of the month. Added to this were some frosts which doubtless checked vegetation and by the end of the month plant life generally was very backward. On the 30th, there was still much snow in the mountains and footbills.

The weather in the North-west Territories was exceptionally dull, cold and wet, the temperature being as much as 6 and 7 below average in Alberta, and the precipitation considerably above average in most districts. Snow fell at many places during the first half of the month, and on the 3rd and 4th some stations reported falls of five and six inches. Frosts were rather frequent during the month, the temperature falling to 12 at some places. These frosts, however, though retarding vegetation do not appear to have done much damage, and by the 31st the conditions were much improved.

The unpropitious weather of the Territories extended to Manitoba, but the conditions there were not quite so unfavourable; nevertheless it was wet and cool and there was little improvement until after the 19th. Snow fell in some districts during the earlier part of the month, and frosts which were for the most part light were general. Vegetation though backward made great progress during the latter portion of the month.

In Ontario the weather did not differ much from normal, the mean temperature, however, was somewhat above average, and the rainfall nearly everywhere was greater than normal. During the first and last ten days it was comparatively fine and warm, but from the 14th to 21st it was unpleasantly cool. Frosts occurred throughout the greater portion of the province, but they were not severe, excepting to the north of Lake Superior where 7.0 and 18.0 were recorded at Savanne and White River respectively. Little damage was caused by these frosts but the many unusually cool nights retarded vegetation and it was somewhat below normal on the last d v of the mooth.

In the Province of Quebec the weather was for the most part fine warm and dry, some unusually low temperatures occurred however in the third week, and during this period it was comparatively dull and unpleasant. Frosts were almost general in the eastern portion of the province, 22 d being recorded at Father Point on the 5th. Some damage to vegetation was caused by these frosts, otherwise its condition was normal on the 31st.

The weather in New Brunswick did not differ much from normal, the departures, which were nowhere very great, being generally local. In the central portion the rainfall was in some cases quite light and although vegetation was about normal on the 31st, it was considerably retarded thereby in this portion of the province. Frosts were general but they were not severe and did little damage.

In Nova Scotia the weather conditions were almost normal, but in most districts the temperature was slightly below average, and while the rainfall was somewhat excessive in the south-western portion of the province it was comparatively light elsewhere. Frosts were recorded at all stations, 21.8 being reported from Truro on the 6th; nevertheless little damage was done to vegetation, which was in almost normal condition.

The weather in Prince Edward Island was for the most part fine, cold and dry, and frosts occurred rather more frequently than usual in most districts. Although vegetation made good progress during the latter part of the month it was below normal on the 31st.—F. F. PAYNE.

#### ATMOSPHERIC PRESSURE.

The mean atmospheric pressure was nearly equal with the average in British Columbia and the North-west Territories. East of Manitoba there was a general excess ranging from 402 to 406 of an inch.

#### HIGH AREAS.

Eight high areas have been charted; four of them moved south-east from Northern Manitoba and the Territories, three eastward from the North Pacific Coast of the United States, and one south-east across the Gulf and Maritime Provinces. Those from Northern Canada were the most pronounced, and one especially which appeared in Saskatchewan on the 17th, and moved very slowly to the Middle Atlantic Coast, was apparently the controlling factor in the weather of Western Canada for about a week.

#### LOW AREAS.

Ten low areas passed across the Dominion and the United States, and of this number eight first became visible in the Western States, thence moving north-eastward and eastward in rather erratic courses. The remaining two first appeared in British Columbia and traversed the breadth of the Dominion. No. 1 appeared in the Western States on the last day of April, and on the morning of May 1st, was centered in Minnesota as a well marked area; it caused a general rain over the western part of the Lake Region, and afterwards scattered showers occurred within its boundaries as it moved rapidly with diminishing energy to the seaboard. No. 2 formed in the Western States and moved northward to Manitoba and obviously an intimate connection existed between this area and the cold wave which occurred in the North-west Territories during several days No. 3 may be traced from the Western States to the south of the Lake Region and thence to the southward of Nova Scotia. It developed as it passed seaward and a northerly gale occurred in Cape Breton. No. 4 was accompanied by heavy rain in Ontario on the 11th as it passed over the province. No. 5 took nearly the same course as the previous area and it was in its rear that occurred the second snow and cold spell of the month in the North-west Territories and heavy rain again fell in Ontario as the centre passed across that province. No. 6 appeared in the Western States, moved across the Lake Region to the Ottawa Valley and dipped to the New England Coast; it then developed and caused rain with gales in the Maritime Provinces and Gulf No. 7 was confined to the Southwestern States. Nos. 8, 9 and 10 may be grouped together as they formed part of a general barometric depression which existed over the western and north-western portions of the continent from the 24th until the end of the month, at times extending over the Lake Region and the St Lawrence Valley accompanied by numerous local rains which were at some places heavy.

#### WINDS.

In British Columbia the winds were as a rule moderate and did not at any time exceed the force of a fresh breeze, and were from directions between south and west nearly the whole month. In the Northwest Territories the force of a moderate gale was reached on four occasions, the greatest number of winds coming from between north and east. This was also the case in the prevailing winds in Manitoba where they were fresh for the greater part of the month and on three occasions reached the force of a moderate gale. Winds were for the most part moderate in Ontario although the force of a strong breeze was reached locally on four occasions, no decided tendency for any special direction was shown. In Quebec the northeast and southwest winds were the most prevalent and they did not exceed the force of a strong breeze during the month.

Three gales were experienced in the Maritime Provinces, two of which were heavy locally, but were not warned.

#### TEMPERATURE.

The mean temperature of May was from 2 to 6 degrees below average in Manitoba, the North-west Territories and the greater part of British Columbia, and a little above average in Ontario, Quebec, and the larger portion of Maritime Provinces. Stations in Southern Alberta show the greatest departure below, and those in Central Ontario the greatest departure above average. The weather of the North-west Territories, was marked by two cold spells, the first of which occurred during the first few days of the month, when the

temperature fell to 12° at Calgary, 10° at Edmonton, and 21° at Qu'Appelle; and the second during the 12th and few following days, when 14° was recorded at Calgary, 15° at Edmonton, and 21° at Prince Albert and Winnipeg. This latter cold spell spread rapidly eastward across the Dominion, and was pronounced in Ontario from the 14th up to about the 21st. The last heavy frost occurred in the North-west and Manitoba about the 19th.

The Highest and Lowest Temperatures in each Province during May, 1899, were:

British Columbia 86 0 on 21th	th at Griffin Lake	6 ·0 on 2nd at Barkerville.
North-west Territories 81 · 5 on 23rd	rd at Oonikup.	9 5 on 12th at Mosquito Creek.
Manitoba	th at Roseberry, 1	$2^{-6}$ on 14th at Channel Island.
Ontario	at Paris and Windsor.	7 0 on 14th at Savanne.
Quebec	at Richmond.	22 d on 5th at Father Point.
New Brunswick	th at Chatham. 2	5°0 on 14th at Sussex.
Nova Scotia	at Halifax.	21 8 on 6th at Truro.
Prince Edward Island	h at Charlottetown. 2	8 ·3 on 4th at Summerside.

#### PRECIPITATION.

In British Columbia, on the lower mainland and Vancouver Island, the precipitation was either equal to or greater than the average. In the North-west Territories it was much in excess of the average for May, and this was particularly the case in Southern Alberta, where it was several times greater than the average. Over the larger portion of Manitoba the rainfall was about average, some districts reporting a small excess, and others a small deficiency. A heavy snowfall, twenty inches at Qu'Appelle and nine inches at Prince Albert, occurred in Assiniboia and Saskatchewan between the 2nd and the 4th, and a smaller quantity fell in many parts of the Territories and Manitoba between the 12th and 14th. In Ontario generally the rainfall was above average to a small amount, but locally, in the counties of Elgin, Lambton and Bruce, there was a deficiency. From the Ottawa Valley eastward it was everywhere less than average—at Montreal about one-half, and in the more eastern portions of Quebec even less than one-half the average; in the Maritime Provinces a deficiency was pretty general, but not so pronounced as along the St. Lawrence.

PRESSURE, TEMPERATURE WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, MAY, 1869.

a. Barameter not reduced to Sea Level. \* Stations not firmished with Registering Thermometers.

		sand to acc.	20008 000 00 0 00 0 000 00000 00000	54501100 00E00
-		- JumiP to az	cope -65 do com Toos o Hám Tamméd Maséma	monerate ended
		zuferrid to .o.z zurorn# to .o.z		245455 22557 245455 22557
1		n fo ditasvs(f	도교의으로 등으는 기원 및 하는 <u></u>	Residence vesse
1	*	Hat t-stresH dinom ni	글라고보면 그음의 등의 HA 원호는 독양된 ( )은호유는 1호구구기가 경출통합부는 :	254583 18858
	ATIO	Hom Average.		18882 8781192
١	PIT	hifference		0155-035- HALGE
	Precipitation	Amount.	_요즘말맞은 _=주문 _8명 남리[원립 _ [반경임 -원 [경우로 ] :월号울리수 [원흡호원철왕 ]	######################################
ı		***************************************	"Descriptions of the implication of the state of the stat	
1	WIND	most noiteer	**	## x # # : ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !
1	7	-th bus and		==47=77  =
	TV of	Highest day's  relocity.		8586522 B
i	ELOGIA	los pons.		The street street
	VEL	Mean miles	<u> </u>	
		Total number	[설육 : 유 ː ː ː ː ː ː ː ː ː ː ː ː ː ː ː ː ː ː	용당근정당당근당용은 [명 :
		C. Total immber	54° 11 1 1 2 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1	약결정보납질등약 <u>원</u> 약 : 이
	7			CHETTE STORE T
2	FROM	N. W.		
1	92	· A1		5:: %45-46.000 : 3
	WIND	'A' 'S		
	ŝ	.8	1874 A	FUELONIZONE IN
91111	TION	'S' E'	\$ 0 B B B B B B B B B B B B B B B B B B	- 프라스아크립티스 <u>+ - 원</u>
1012	PIRECTION	- 'a	gee 19	TELEXERX HOUSE
3				ಬಬ <b>ೆಬಎ∸್</b> ವೆ∞ಬ <b>ು</b>
		7. E		4-8040 <u>8104</u> 0
TO OT		Χ.		
Ē	-əidw	Zo, of days co tely clouded.	-30 <u>,</u> ∠	x 2011-x . E : 00
		Mean amount of	14-64-14-11-11-14-11-14-11-11-11-11-11-11-11	al-ar-r- :0 :0 :
2		midity.	7	
5		Dewpoint, Mean relative		
Ž,	10 911	yfian ninbeam	SERVICE THE THE THE STATE OF THE PROPERTY OF T	୧୮୭୮ ମଧ୍ୟ ନଳ ଓ <b>ମଧ୍ୟ ପ୍ରତି</b>
		Mean daily	នកសនធ នកក ដន នៃ កក ដនត ក នៃនគ ំ នមនុងក <u>សន</u> តម្ដស្សារ	
_		Pate.	# # # # # # # # # # # # # # # # # # #	20144047 Questa 12 Ques
2		Lowest.		152225885255
25	348.			× 555554 × 55688548
, E	TRMPERATURE.	- Date.		000000000000000000000000000000000000000
ee e	MPE	Highest.	-   後書はは、おおた「きさ」に「とす」「おざり」が「おせれ」「現代がきま「注意は作えた」。	ZERREYZEVERKE
Ē	13	Tears observe.	- එම්බමුලි ලබුරු සංඛ විධාරක විධාන ව විධාන ව ලබුණු සංසමු [1]   විධානවට වෙන සංඛ ව නම් ව වනවා වෙනවා වෙනවා විධානව වනවා විධානව විධානව විධානව විධානව විධානව විධානව විධානව විධානව ව	F4231E7314@46346
nor r		Phillerence		
i.		-	සමහනම දිනුවල (සහ (සා 2000 ද ) (සමස් දරුණුවල ද (සම් <b>සිට</b> ම් විධි	20054550000050
Bec		Меан	\$&\$\$\tau \tau \tau \tau \tau \tau \tau \tau	94444444444
Sar		Paring.		22.72.80 S : : : : : : : : : : : : : : : : : :
	5.5	,180W0.I		#####################################
	STB		- figg _a + ra - r	_ 6888888
	URESSURE	Highest.	. 1966년 : 1867년 : 1977년 : 1978년 : 1979년 : 1979 - 유명화 : 1867년 : 1989년	28888888 8 : :
	_	Jean reduced.		V 2 3 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
	į	Level, in feet.	기계 등 기계 등 기계	55555555555555555555555555555555555555
	vaS	Elevation above		222222222
		Longitude W.	- Assausantantantantantantantantantantantantanta	#88##88##88##88# #88##88##88##
	-			
		.Z obutitud	• 4834544544694464646464646464646464646464646	50395508855888
			COMPASSION CONTRACT C	a i i i i i i i i i i i i i i i i i i i
		N O	A de la contra del la contra del la contra del la contra de la contra del la contra de la contra de la contra del	Et it it
		11	information of the control of the co	Alberta (2).
		>TATION.	Anternal Cottonia. Anternia An	M. Tenamones.  M. Tenamones.  Elmono.  M. Corent  Or Appelle  Prince Abort  Prince Abort  Omitap  Comitap  Comitap  Mose Iva  Mose Iva
	1	/-	Berrish Carryna, Agestra	N. W. Tenrundes  N. W. Tenrundes  Eduction Self Control On Appelle College Abert Buttelord Oouthor Buttelord College (2) Chapin Mose Jaw Regins Regins
			#	N E

	_	
.)	Э	

	THESE DEPONDED FOR THE CONTRACTOR OF THESE
eme - 40 00 -0 1151 -5. 601 1-15	B Hose componented a Homoseter cashed
ରିଲ୍ଲ ଲ ଲିଲି <u>ଲିକି ଅନ୍ତି</u> କ୍ଷର ଗଟିଆ ଅନ୍ତର ଜଣ୍ଡ ଜୁଲ ଲ <u>ଲିଲ</u> ି ଜୁଲି <u>ଲିଆ</u> ଅନ୍ତର ଜଣ୍ଡ ଜଣ୍ଡ ଜଣ୍ଡ	발 청합용한 말고프로요스트록용스환경 (LLOSE # 현황 현황으로의 (1999년 스스타 발 경영경로 보고프로요요주원로요스트 (Lucal # 연호 # 연
보고를 보면 보면 보면 보다 보다 되는 말로 보면 보다.	7 6988 879998888 7388698889 year
1983   <u>81 88   1   1   1   1   1   1   1   1   </u>	
	a least seems to to to the seems to the seem
변경도 2 12 12 12 12 12 12 12 12 12 12 12 12 1	<ul> <li>현 , 본대통령 (경우 6 전 6 전 6 전 6 전 6 전 6 전 6 전 6 전 6 전 6</li></ul>
# 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
Tiliiniii lei «» ili eiesilli	2   B   (2 × 2 )
	* 1 1 17 1   \$0xx 1 1 B 1 1 1 1 1 1 1 1 1 1 1 B 1 B 1 B
	경험에 의용의 [국민준공 경험 의원 : [ : 1 - 1 ] 의 의 원경에 급급한 : 의 기간 [설 :
0+00 00 0-0 2- 00 mc - 7	- 유명하여하면 설팅점점으로 하는 100mm 로마르엄스 마음 시는데 이 100mm 로마르엄스 마음 시는데 100mm 로마르
Res 1 1 1 1 2 2 2 1 2 2 1 2 2 2 2 2 2 2 2	· 소리 아니라 의원조절의 아이는
1.08 = 1.0 = 1.0 = 0.0 : -1. 2 : 1. x	- 프로우루어를 별착중요이스트바 : : : : : : : : : : : : : : : : : : :
4044	- 트림웨프트리 중의활물부리리리 : : : : : - :
00-0   00-1   15 2121   -21   1 2 × 1-∞   2 × 1	- 프레마늄보레 육의주플리크리지 : : : : : : : : : : : : : : : : : : :
중이원의 1년의 1년 조를 구위 (FX 도립 두 1년	
<u> </u>	마음이용부음 설닷얼로===== : : : : : : ===== : = : = : = : =
5240 14-0 1 000 1-L 1 159 35 0 S	T #\$507\$ (ZEB#IFT) : : : : : : : : : : : : : : : : : : :
ONTT 6x 3xx4 05 FE 42 4	
	2
	- !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
xesus jou judy venix na+ , jux+ , suc+ [xs.,	mum ummarres seria assensa arves arves m
**************************************	*
	540-556 [46-46-566] 62-56-56-56-56-56-56-56-56-56-56-56-56-56-
ର୍ଷ୍ଟର ଓଡ଼ିଆ । ଅଟି (ଅଟିରି ଅଟି ଅଟି (ଅଟିର (ଅଟିର) ଅଟିର ଅଟେ ଓଡ଼ିଆ । ଅଟିର ଅଟିର ଅଟିର ଅଟିର ଅଟିର ଅଟିର ଅଟିର	*cose hereasses be-especial seems as
उन्हा सन्न स्थार स्थाप अन्यस्था वर्ष सन्नासक्ष <sup>ा</sup>	- 表世にはは、1649を立ちされるという。 かんちじんさけまりじたフェー・ラッタラミッテー
	191944 22555210000
- 01-40-4 [xx ]	Hase-are recommended to a control of the control of
**************************************	क्षां व स्थान स्था
# : . : . : . : . : . : . : . : . : . :	7
2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5
- <u> </u>	- 有 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
# : : : : : : : : : : : : : : : : : : :	- a 1999 (aaaa a 1974 ) 1999 (aaa a 1999 ) 1999 (aaa a
	8 1 1 1 1 1 2 3 3 3 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 2 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	等 1隻 1 1 1 多音等度符 1 1 1 4 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2
- \$1846666800000888 : \$18000000000000000000000000000000000000	
- 555000 55000 55000 5500 5500 5500 550	XP8xxV6258x5657955666666647775577575
**************************************	esxxxxxxxxatqdaaaaaccqaaqqaababbeesscocccc abbaaasaxxxxxxitqdaaaaccqaaqqaabbbeesscocccc
N. W. Terretures:—Con- Chain there of the con- Mandaton March A terreture of the con- Created of the con-	ONTAKO  ONTAKO  ONTAKO  STATEMENT  STATEMENT  ONTAKE
Almort Almort Manor Mano	
Hearth Library Creek Company of the	
W. Transtories — Con- Dobini I ford Machagaru Maner Machagaru Maner Machagaru Maner Machagaru Maner Mane	Obrano Suddorn Suddorn Suddorn Morth East Morth East Mo
Managara Angara	Manager A. S.
M CEMALA	•

00.00

ic a

2 65 36

Home caleboratedues

201000-01000400

ดิธิอดครอธ์อิต

-n-00-0000110011000000100000 0

CONTRACTOR TO THE SECRET

I No. of Pogs.

suspany in ox

1 No. of Thund, storins

ದನ್ನು ಭಾರತಿಗಳ ಸಂಪತ್ತಿಗೆ ಪ್ರಸ್ತಿಸಿದ್ದರು. ಪ್ರಶ್ನೆಗಳ ಪ್ರಶ್ನೆಗಳ ಪ್ರಸ್ತಿಸಿದ್ದರು. 0.5 1828 | \$3555 1882 | \$3555 samp aing po 'on | 848 22288882828 erom to for dim spail ±22= 2222227<u>7</u> 210.0 252755532824274422536668 73582255738 -100-101-0-1 -1382-100-1 25 48888 0000 +2.140.51Heartest fall 30.0 90.025 THE DOMINION OF CANADA, MAY, 1898 PRECIPITATIO 853422 Бійстепее, поті 7777 7777 9 -21-Ť :22 :#9 132 888888888888 8514 95 "DIFFICULTS" WIND N N ST N N O. -ib ling sigd mort noiteer Ħ 30 VELOCITY OF 33 0 VI 33 3 Highest day's velocity. 11 : ≧ III 33 E 3 2 2 Mean miles = : :8,7 :3 : 8: 8 :83 FRSF8F8888. 8 sinon jo :::20:2 . 33 Legunu [13]0 I Thermometers. \*=5555000 21.18 м CN : 9 :84 × άO 3015510Ecto# Registering 8 DIRECTION ं क · S' E' STATIONS IN E. With Z'E :0015 :23 :27 .631 #H1-9050 farnished .N :45:00 Xo, of day completely cloudeds, to tanoms assM not Mean relative Hn-Z AT· Stations Dewpoint de surtangement of PRESSURE, TEMPERATURE, WIND AND PRECIPITATION 100 azona 288888 | | | | | | 15.18 2001-Tlish mest 25 204888888 20666 Lyvel 55.7 159W04 reduced to Sea 0 + 2 6 23 56 0 dighest. 00 1-1 00 685 ::: 5000 9 Yearsobservt. :0 +1. 2010211111 9 Difference 1 Barometer not : 5. :3 1.98 1885 3223333333333 95555444444 . 77 Jean. 122 NS 0 68 0.0 0 135 23 : 62 100 одинЯ 8 0 6 28, 29, 55 13 29.73 188 61 PRESSURE. ÷ 33 ŝ 30.31 ë 200 .best. 88 66 00 30 93 :8 :1: Mean reduced 63 30 :63 7.5 Elevation above Sea despite in feet, ~244456948648488E88488438445045544888**28**4<u>5</u>8 :15 ŝ .W aburitued Ē \$42\$88868588 . bs : # Latitude X. ನನ್ನಿನಿನಿನಿ ಪ್ರಾಪತ್ತಿಕ್ಕರ Taketid Riderent Riderent Riderent Christon Christon Christon Elsent Risert Ris Nemicon
Nemicon
Cockburn Island
Cockburn
Cockb NTARIO-(Continued.) Vellund .... STATION Somestogo Stony Creek

	-0112x 01100	m-:::::0	-r . No.	0 9-	F= 21 - 22	
: : 	01-202001001	55-56	,-=": T-=	= ==	G G G	_
೦೦ ≎ 8≭ 8		271738	35 ES	9 8.2	± 87 = £9	
-== ×	550×5450×	x===:x	5.7 220	× 25	======================================	_
488 : : : : : : : : : : : : : : : : : :	8848488	25239	88 : 89 88 : 58 88 : 58	8 (68	<u> </u>	4 5
.#3::::	무용도로도요공당당		86 : : : : : : : : : : : : : : : : : : :	E : 11	25 X	
-772	79237722 ###3555384	_7-7 <b>7</b> - 688 <b>85</b>		! :		1 2
.56. S Een 1	94-4400000	2212	126   82 40   00	21 212	135	-
_ = 1 . 1 1	15 20 20 20 N N N N N N N N N N N N N N N	\$ 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		z .	* > : :	=
<u> </u>						# 전 전
\$ # I	13 0 12 2 13 0 14 2 15 3 16 3 17 3 18 4 18 4 18 4 18 4 18 4 18 4 18 4 18 4	555 5 <del>5</del> 5		2111	2 p i i i i	= 81
7 H	6.7 H 5 H 5 1	11 7 12 9 16 11 11 11 11 11 11 11 11 11 11 11 11 11		G	12 111	:-
					1 111	:
¥8 : : :8	응원문화문명 : [편	#### <b>#</b>		. F   FF	88 3	8
E2 :::**	e9-5Ex ∷		i° : : : : : : : :	<u> 1</u> ]==	== ::=	
Ē <sup>11</sup> : : : *	o 4%r-≜u ∷,	_		# E	::-	20
82 : : :	0.02-09 F		:= ::::::::	S (712)	1-62 : :53	0
-0, :::0	0.4877840		·	= + 6.1	7 F 157	2.1
26 : : : i.a	1-5-3- :-		°	7 7	5.71	2
₹° :: °	2-3-30 : :-		٠,	Ta (-7)	-155 E	.0
₹ <u>₽</u> : : : 7	3258812 P	Σ≅ ,≅3		E   F1 =	==:=	7
5- : :º	848±89 : :x	8 <b>6 8 <u>5</u> 8</b>	-	E -	111-1-11	= -
28 : 2		84=87		\$ (E2)	92 =	4
		x =:- \pi x		= ::		ω .
₹ ::::	10 m - m 10			* 1 1	9111	10
	09			:		
111111	7::::::::::::::::::::::::::::::::::::::					:
991 - 199	\$ 111 111	1-0005 6289 <u>6</u>	1011111111 15. 1 = <del>1</del>	7 21 -	-	
	895 <u>58899</u> 200 10000	_ <u>#409</u> E		- <del>+</del> + <del>+</del> + <del>+</del> +	. <u>E</u>	_ =
	Secondaria	51-xx6		× × =		9
0 9 5 5 0 8 8 8	និតិនិនិនិងឥឡ	ត់អាចនិតិ		វ នៃ	18 S	13
82 : : 55	នូសមន្តមន្ត្រកន្	2 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	特容   [音巻 +	គ្គូ គឺតំ	97 HF	₹
58 : : : : : : : : : : : : : : : : : : :	30000000000000000000000000000000000000	2 10 kg	28 1110	□ 1,9 =	_23 118	: 1 Z
(2°24 )	550-0-040 560-0-00 560-0-00 560-0-00 560-0-00 560-0-0-00 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0-0 560-0-0-0 560-0-0-0 560-0-0-0 560-0-0-0 560-0-0 560-0-0 560-0-0 560-0-0 560-0-0 560-0-0 560-0-0 560-0-0 560-0-0 560-0-0 560-0-0 560-0-0 560-0-0 560-0-0 560-0 5	_ 55525	e e e e e	-5.35 11.5 11.5	55 5	7
+		- 1   - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	9	= 11	718 : =	g1
517 5130 5130 5130 5130 5130 5130 5130 5130	6633834888 66-46000000	ಸ್ತೆಪಡ <b>್ಡಿಕ್ಕ</b> ಜನಗಣಾತ್ರ	0:: \$0 50	5 19 19 19 19 19 19 19 19 19 19 19 19 19	21-19	8 99
			: ::: :		1.1	
is o 76	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			§ : : :	8 : : : :	76,0 60
4.8.	888 B	5585 8885		- 분 : 참 : :	_ # : : : <b>:</b>	51
- G :	888 8 · · · ·			- R		E .
<u> </u>	B 등 명 : : : :	8978:		- 8 - 1 - E : :	6 1 1 1 1	35
64 : 1 : 1 : 2	2598 8 · · · · · · · · · · · · · · · · · ·		# : 6 : 6 # : ·	- ×		98
	7 ::	:	1 1 11		45 : :8	=
ಿ ಜಿಟ್ಲಿಎಪಟ್ಡ - ಜಿಟ್ಲೆ≈ ಜನ	888888888 888844828	20 12 03 12	57989252 56868333	2884 2888	월드왕당동 강왕왕왕당	35
Quence - ('outmont)   49 34 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5	Nay Busserror: Challann  Fredericton Challann  Grand Mann  Grand Mann  Grand Mann  Fredericton  Fredricton  Fredericton  Fredericton  Fredericton  Fredericton  Fred		Dorf Rustings   65 29 of Section   65 20 of Secti	. E. Island: ("Ourlottetown   6 H 63   62 (congretown   6 H 63   63   63   63   63   63   63	25222 25222 25222 25222 25222 25222 252 2522 2522 2522 2522 2522 2522 2522 2522 2522 2522 2522 2522 252 2522 2522 2522 2522 2522 2522 2522 2522 2522 2522 2522 2522 252 2522 2522 2522 2522 2522 2522 2522 2522 2522 2522 2522 2522 252 2522 2522 2522 2522 2522 2522 2522 2522 2522 2522 2522 2522 252 2522 252	Prospect.
* * * * * * * * * * * * * * * * * * * *		VVA SCOTIA: [1] 3 ydnov; [1] [1] [2] [3] [4] [3] [4] [4] [4] [4] [4] [4] [4] [4] [4] [4	Port   Mastings   65 32     Whitelevard   65 15     Whitelevard   65 15     Stable Island   65     Grystorough   65     Sarbel Island   Mattrion   65     Burgabaro   65     Burgabaro   65     Burgabaro   65     Erickertown   65     Gridgertown   65     Gridge	2222	Newton Notand   47 3   54 John   17 3   17	13
2.					-	:
W. P			7 . S			
Se Se	wice on	¥	- E - E - E - E - E - E - E - E - E - E	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	AND THE STREET	:
c-(' sosti, hi: rosti Rock val.	rick mm. I Ma Lepa thu mie on.	COTIL IX.: y	Frati hear hear Islan town	at AN office of cow or take	North Mark	- ±
Anticosti, S. W. Pt. Anticosti, S. W. Pt. Abitini. Anticosti Bird Rocks Reherval.	Ngw Britzswicz : Frodericton Charlen Mann. Cremel Mann. Cremel Mann. St. John St. John Dullousie Dullousie St. St. St. St. St. St. St. St. St. Marcton Mansey. Mansey.	Nova Scotta: Haditax Sydney Viller Turo Yarmouth Picton	Figure 1	P. E. Island: Charlettetow Georgetown, Summerside Hamilton,	Newtourneaun : St. Johns. Eslema Morte. *Cape Norman : *Amour Point :	Bremupa : Prospect.
o AA¥¤¤q	Banda Agaza y	SE SERRE	a⊨āēāā≡ā		2745 <b>7</b> 4	Brit Pr

# PRECIPITATION AT STATIONS REPORTING RAIN, SNOW AND WEATHER DURING MAY, 1899.

STATIONS   Amount   Lays   Lays   Grant   Lays   Lays   Lays   Lays   Lays   Lays   Lays   Month   Lays   Lays				RAINFAL	L.			Snow	FALL.			
Beaset Preek	STATIONS.	in D		Fair	Fallin	Date	in		Fall in	Date.	Remarks.	
Saltendes	Beaver Creek. Cumberland Nanaimo Langley Salt Spring Island	4 13	11 15 12	16	0.44	16 12 7					12th, hard frost, 12th, ice formed.	
Research Creek	Salteoats Sterling Innistail W. Braver Hills Didshipry	4 56 1 82 3 66	9	11	0 45 1 60 0 71	26 18 27 18	6 0 1 5 2 5 0 3	4 2 3 1 2 3	6 0 1 6 2 5 0 2	14 13 11 13	Rainiest May in 10 years. Frost on 29th.	
took Lake         2.55         5         2.50         1         3         3         1         1         12         Min. ther. 19° on 13th.           Colklanks         1         1.5         1         2.5         1         4.0         1.0         2.0         1         2.0         2.0         2.0         2.0         2.0         2.0         2.0         3.0         1.2         3.0         1.2         1.8         1.3         2.0         1.2         1.8         1.5         3.0         1.2         1.8         1.5         3.0         1.2         1.0	Reaver Creek Reselverty Rapid City Selkirk Cartwright (2).	1 16 2 16 1 64 2 24	11 11 6	19	0 98 1 11 0 53 1 36 0 60	26 26 26 4		i	*		Ice ; inch on 13th.	
Belmont	Oak Lake Oakbank. Pembina Crossing Shoal Lake Norquay Tirtle Mountain Elem Cartwright	2 96 1 35 2 61 2 30 2 36 4 04 3 30	5 2 10 8 12 10	26 20 24 17 23 18	1 98 0 45 0 57 1 40 1 36 1 92 1 55 0 97	3 26 26 31 26 26 3	2.0	5 4 1	1.0	12 2 -		
Partial   2   2   11   20   0   25   12   13   14   15   14   16   16   17   14   16   17   17   16   17   17   18   18   14   18   17   18   18   18   18   18   18	Ortens  Ontario— Cherry Valley Wooler Scarbero Landowne	1 15 2 15 4 47 5 00 1 89	5 14 9 8	26 17 13 23	0 50 0 75 1 25 0 77 0 44	25 1 29 30	· · · · · · · · · · · · · · · · · · ·				15th, ice formed.	
Smithuse	Parma Arden Aurora Elgin Watford Port Eurwell	2 41 4 47	13 11 7 10 15 8	20 24 24 21 16 23 20	0.69 0.70 1.03 0.56 0.60 0.66	30 11 28 17 18 11 17 29 16					15th, ice formed	
Wintron	Sunshme	1 01 4 15 2 15	14 12 12 11 4 15	17 19 19 20 27	0 72 0 65 1 34 1 51 0 70 1 27	29 11 29 17 16 20						
Deer Park   19   12   19   0 62   11   1	Wiarton . Emismore Emisdale Ohver's Ferry Dealtown Montague Huntsville Fobliu's Mills	83121044455 514 10115154	11 10 11 5 7	21 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0 84 1 50 0 98 0 17 0 98 0 66 1 75 1 50	28 25 27 16 29 30 20					14th, ice ½ inch.	
New Bresswick	Deer Park Ursa Croydon Lion's Head Princeton Providence Lay Sparrow Lake Coldstream Nottawasga 1-land	19 4 51 2 70 2 25 3 63 4 90	10 6 7 11 11 11	24 19 21 24 24 29	0.75 0.62 1.50 0.70 0.70 0.74 1.03 1.03 1.03 1.03	11 22 1 57 10 16 29 17					15th, ice formed.	
Nova Scutta —  Port Morion	New Brunswick- Point Escuminae		1		1							
Murray River 2 86 9 22 1.33 25 • 1 1 •	Nova Scotia — Port Morien P. E. Island— Morrey Enge	2 04			1.33	1						

#### Thounder-stornes de al don

- 1. Cherry Valley, Wook -, Scarboro, Luismowne, Arden, Jermyn, George Whirted Goley, Ursa, Providence Bay, Ridgetewn, Otonabee, Lekefield, Agincourt, Peterboro, William Goley, Descript Sprucedale, Owen Sound, Polit Clark, Uplands, Descript, Lindsey, Guelph Goston, Polit Script Williams, River, Bancroft, Stony Creek, Pairsboro, Sussex, St. Mary's, Clontarf, Birmare, River
- Roseberry, Rapid City, Oak Lake, Pembura Crossing, Shoal Lake, Turty, Manutalli, Egan Hill,
   Belmont, Arden, Lakefield, Gesfield, Chronitimi, Brone, Treherne, Aweme, Paper ne, St. Stephen, Branco,
   Stratford, Quebec, Frederictor.
  - 3. Norquay, Cartwright, Hillview, Greens, Brajelon,
  - 4. Roscherry.
  - 6. Pembina Crossing, Rel na.
  - 7. Pipestone, Brandon, Hamilton, P.E.I.
  - 8. Roseberry, Aweme, Physistone, Griffin Lake, Quesnelle Forks,
  - 9. Norquay, Sayanne, Medicine Het, Bermuda, Regma
  - 10. Roseberry, Princeton, Brantford, Point Clark, Guelph, London.
- H. Pembina Crossing, H., 'view, Belmont, Jermyn. Brantford, Pipestone, Cooperatin Branton, Society. Port Stanley, Regina, Quesnelle.
  - 12. Norquay, Arden. N. Sisters Rock, N. Nicomen.
  - 13. Langley, Providence Bay, Hyzlemere.
  - H. Hailevbury,
- Port Burwell, Wesning, Wilson Grave, Winton, Princeton, Ringetown, Electust, Sarnia,
   Collingwood, Lucknow, Gosfield, Brantford, Hamilton, Chatham, St. Mary S. Barakan, Point Cark, Dutham,
   Guelph, London, Stratford, Post Stanley, Dutton.
- Wyoming, Wilton Grove, Dealrown, Princeton, Ridgetown, Erasma, Lucknow, Gesfield, Paris,
   Brantford, Port Dover, Chat and Stony Creek, St. Mary's, Birnam, Point Chall, Darke a Scratford, Port Arthur, Port Stanley.
  - 22. Collingwood, Quesne, a Forks.
  - 23. W. Beaver Hills, Williams Ottoms' on.
  - 24. Contts, Lakefield, Toolico Phins, Brandon, Collecti,
- 25. Oakbank, Pembira C.; ssing, Tartie Mountuin, Elgin, Hillview, Jermyr, Wibrit Uvva, 2c. Erismus Otonabee, Lakefield, Menford, Leterboro, Liu, et al., violine, Physical Rev. Doc. Conniction Mannel Mouse Jaw, W. Kootenay, Point C.; Lindsay, Gue'ph, Mediane H.; Switt Current, Regime, Hancybury, Burrie.
- 26. Norquay, Elgin, Be'test, Wooler, Antons, Jerman, Mod'una, Unoriege, to przetown, Wintom, Ursa, Otomabee, Halburton, Azine art, Pererbere, Gesfeld Fort Hope, Perec Sasson, St. Stephen, Moose Jaw, Clontarf, Brandon, Calgary, Point Clurk, Darven, Lim'soy, Coolwater, Stretchen, Medicine Hat, Qu'Appelle, Winnipeg, Ottawa, Circthan, (Juchec, Frederict in Hadeybury Barrie.
- Roseberry, Norquay, Elgin, Hillview, ft broom Wyoming, Midiand, Riagerown, Goede d. Steuffydle,
   Niagara, Aweine, Camington Manor, Grima Lake, Garesparth, Birnam, Desermon Swaft, Carear Port Samley,
   Dutton.
- 28. Penbina Crossing, Cherry Valley, Woode, Soubero, Ardem, Port Polece, Smith's Fills, Maddell Arangeville, Georgetown, Welden, Erdsnas, Ordenber, Brondfeld, Agadeour, Collegewood, Locknew, Gosfeld, Port Hope, Owen Sound, Pictoring, Nagada, Bertino, Stony Crosk, St. Marys, Bottom, Point Cork, Durham, Descrotto, Lindsay, Guelgh, Colliwater, Grocechard, Stratford, Suggeon, Barder.
- 29. Cherry Valley, Wooder, Starboro, Jernayn, Onang viele, Uxbridge, Sm. vire, Wiston Crove, Georgeotown, Emstide, Dealtown, Krey, Ursa, Cropdon, Sp. 11 of Luke, St. George, Reagesown, Emensis, Onondon, Lakefield, Halibutton, Mearley, Parts, Part Hope, Brantond, Sprinochile, Port Dever, Owen Sourca, N. 85 ters Rock, Agincourt, Collingwood, Peterboro, Kinnourt, Whiteside, Lucknow, Gerfield, Cochburt, I land, Birmann Point Cauk, Uplands, Durhan, Deseronto, Lindsay, Stouffville, Pichering, Hamilton, Beattle, Bancton, St. Mary's, Clonton, London, Codwater, Gravenburst, Stratford, Woodstown, Party Sound, Saugen, Port Stanley, Bartie, Dutton.
- 39. Arden, Einsdale, Sp. row Lake, Abit bi, Pipestone, Cannington Manor, Cockborn 4-1 and, Point Clark, Descrepto, Ottawa, Quebec,
- Wyoming, Dealt wm, Huntsville, Providence Pay, Ridgetown, Gone a Beatrice, Abitabi, Post Hastings, Uplands, White River, Port Stanley, Harleybury, Dutton.

Aurora recorded -

Where the class of accrors is noted by the observer, it is given (I) being the brightest, (IV) the feeblest in brilliancy.

- 1. Cockburn Island, Nelson, Pictou, Treherne, Erasmus, Lucknow, Georgetown, III; Huntsville, II; Cape Magdalen, Durham, Coldwater, II; Gravenhurst, IV; Truro, IV; Prince Albert, I; Halifax, II; Barrie, III; Oonikup.
  - 2. Savanne, Haileybury, III.
- 3. Birnam, III: St. Stephen, IV: Clontarf, III: Nelson, Red Deer, I: Erasmus, Meaford, Port Hope, Brantford, IV: Port Dover, Hamilton, Bancroft, III: Savanne, Huntsville, IV: Pembina Crossing, II: Toronto II. Sudden and brilliant display at 10.40 p.m. Halifax, II: Father Point, III: Quebec, II: Fredericton, III: Coldwater, III: Gravenhurst, II: Truro, IV: Medicine Hat, I: Haileybury, I: Barrie, IV: St. John, III.
- 4. Calgary, 111; Clonturf, IV; Aweme, II; Hillview, I; Chicoutimi, Cape Magdalen, Quebec, IV; Medicine Hat, III; Swift Current, III; Kingston, I; Father Point, III; Haileybury, II.
- 5. Calgary, III: Cannington Manor, III; Portage la Prairie, Aweme, III: Georgetown, IV: Battleford-IV: Cape Magdalen, Coldwater, I; Truro, IV: Medicine Hat, III; Prince Albert, IV: Father Point, III; Quebec, III: Haileybury, Oonikup.
  - 6. Meaford, Haileybury.
- 7. Hillview, IV; Channell Island, IV; Savanne, Gravenhurst, IV; Father Point, III; Quebec, IV; Haileybury, III.
  - 8. Savanne, Gravenhurst, IV; Haileybury, IV.
  - 10. Pembina Crossing, III; Gravenhurst, IV.
- 11. Cockburn Island, Hillview, IV; Savanne, Emsdale, III; Huntsville, III; Coldwater, II; Truro, IV; Kingston, III; Father Point, IV.
  - Minnedosa, I.
  - 13. Minnedosa, 1.
  - 14. Savanne.
- 15. St. Stephen, IV; Bancroft, II; Georgetown, IV; Kingston, I; Yarmouth, IV; Father Point, II; Quebec, IV; Haileybury, III.
  - 16. Haileybury, 111.
  - 18. Hillview, IV.
  - 19. Hillview, IV,
  - 20. Hillview, IV; Savanne, Haileybury, IV.
  - 21. Cannington Manor, IV: Treherne, Hillview, II: Channell Island, IV: Pembina Crossing, IV.
  - 22. Haileybury, IV.
  - 26. Bancroft, IV.
  - 30. Haileybury, IV
  - 31. Truro, IV.

Appearance of Spring Birds, &c.

Swallows,—Coutts, 16th; Gatesgarth, 19th; Red Deer, 9th; Qu'Appelle, 11th; Fredericton, 3rd; Barrie, 11th; Oonikup, 8th

Whip poor Will. Pembina Crossing, 16th; Gravenhurst, 2nd.

Cat bird. = Pembina crossing, 18th: Owen Sound, 1st.

Oriole.—Pembina Crossing, 21st; Lucknow, 1st; Owen Sound, 3rd.

Wren. — Pembina Crossing, 22nd.

Bobolink.—Pembina Crossing, 23rd; Scarboro, 6th; Erasmus, 15th.

Humming Bird.—Pembina Crossing, 30th; Arden, 13th; Clontarf, 24th; Port Hope, 10th; Stouffville, 13th; St. Stephen, 23rd; Barrie, 26th.

Robins .- Hillview, 4th; Barkerville, 2nd.

Yellow birds, Arden, 16th: Barrie, 23rd.

## PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE. THE HORIZON IN THE MONTH OF MAY, 1826.

	HOURS ENDING															
	5 <b>д. м.</b>	6 A.M.	7 A. V.	8 A+M+	9 A.M.	10 A.M.	11 A.M.	Nuon	1 P.W.	P. W.	P.M.	4 P.M.	Р. И.	P.M.		P.M.
VICTORIA	0.10	0 (()	0.49	0.51	$(1) = \frac{1}{2}(1)$	0	0.4*	9.5%	0.54	1.57	1.74	0.43	0.45	05		
KUPER ISLAND											8					
AGASSIZ, B. C			1.114	$\alpha \gg$	4.24	() ()	0.20		0.30	0.25	0.2	0.26	0.16		1002	$\{r=r\}$
BATTLEFORD	0.30	0.41	<b>0</b> :44	0.46	0.51	0.53	0.54	0.52	0.50	1.50	0.46	$()=\tfrac{4}{3}\epsilon_1$	0.43	0.5	- 12	
INDIAN HEAD																
Brandon,		0.23	0.50	0.50	0 ==	0.55	0.56	0.53	0.45	0.15	11.45	0.25	0.2	0.31	0.27	
WINNIPEG	0.04	0.30	0.15	0.40	0.45	0.45	0.49	0.49	0.46	0.4.	0.41	0.41	0.35	0.36	0.24	
Durham		0.02	0.24	0.36	0.45	0.57	0.59	0.57	0.64	0.75	0.65	0.60	0.42	0.53	0.06	
WOODSTOCE		0.03	0.32	0.47	0.49	0.49	0.52	0.55	0.55	0.61	0.59	0.55	0.49	(1.46)	0.28	0.12
TORONTO		0.12	0.43	0.57	0.50	0.50	0.55	0.57	0.55	0.5	0.55	0.67	0.73	0.47	6.32	0.02
LINDSAY	0.02	0.23	0.36	0.47	0.51	0.51	0.55	H 5×	0.60	0.58	0.56	0.52	11746	0.45	0.36	-1,2
Barrie		0.11	0.46	0.47	0.46	0.70	0.54	0.55	11 611	0.59	0.56	0 141	0.64	0.50	0.26	
Kingston		0.19	0.45	0.50	0.52	0.58	0.61	0.55	0.59	0.61	0.65	0.57	0.60	0.15	0.25	
Ottawa		0.25	0.51	0.52	0.55	0.57	11 54	H-12	0.57	0.57	0.58	0.58	0.56	0.55	0.26	
MONTREAL		0.24	0.56	H-62	0.70	0.70	0.74	0.69	0.65	0.59	0.61	0.61	0.66	0.51	0.06	
FREDERICTON	0.20	0.50	0.61	0.60	0.56	0.55	0.65	0.64	0.60	4+5	0.60	0 59	0.55	0.42	tt (1°,	

	VICTORIA.	KUPER ISLAND.	Aakssiv.	Ваттемовр,	INDIAN HEAD.	BLANDON.	WEXNIFEG	DURHAM.	Woodstock	Toronfo.	Jandsay.	BARETE.	Kingston.	OUTAWA.	MONTREME	Friedric Ton.
MEAN PROPORTION FOR MONTH																
DIPFERENCE PROM AVERAGE	-0.07		-9.09	-0.05		D (p -	-0.16	***		-0.03		0.43	0.03	~~	0-10	0.07
MAXIMUM DAILY AMOUNT	9:77		0.62	0.34		() **	0.91	0.81	0 **	0.3	0.06	0.57	0.90	0.01	1 00	0.91
Date	27		-	21		15	1.	1.1	10	24	2	2	4	3	17	
No. of Days Completely Clouded	4		14	19		7	11	`	4	2	1	1,	1	4	2	5

#### FORECASTS FOR MAY, 1899.

The forecasts issued by this office at 11 p.m. each night are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions is used during the month was 877. These were divided as follows:-

	No.		VERI		
DISTRICT.	Issued.	No. Fully.	No. l'urtly.	No. Not.	Percentage.
Mantiora	89	70	13	6	\$6.0
LAKE Superior	50	în.	30	7	78:5
LOWER LAKE REGION	111	50	21	10	81.5
Georgian Eay	111	91	11	9	86.9
Ottawa Valley	94	~ }		7	91 0
Upper St. Lawrence	93	70	10	1	90.3
LOWER &T. LAWRENCE	80	73	*	4	56.5
GULF	• 05	72	13	10	45.1
MARITIME PROVINCES	1412	5(1	19	3	ST 7
Lucation	S77	657	128		85.6
(UIAL	71,	(17.1	125	100	50 b

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and olded to the number fully verified, and the result divided by the total number issued.

In a certaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

The forecasts for May were issued by the Forecast Official, B. C. Webber.

#### HINTS TO OBSERVERS

(F. F. Payse.)

To those voluntary observers in Canada who extend their observations beyond the reading of their instruments and desire to make their records of auroras, thunder-storms, we, as complete as possible we would suggest that in addition to noting the class to which the aurora belongs, as set forth in the book of "Instructions to Observers," a full description with the date and time of beginning and ending would add much to the value of the observation. If possible the altitude and azimuth of the arch should always be given, or its position may be explained by reference to some well known fixed stars. The extent and position of streamers, presence of corona, prismatic colours, waves, &c., should be noted and it would be well to mention whether changes are rapid or slow.

To most volunteer observers a full description of each thunder-storm may perhaps be found too tedious, therefore the following observations are suggested, they being of most importance.—Time when first and last thunder is heard, position of thunder cloud when first seen and when last seen, time of beginning and ending of rain or hall, direction, and maximum force of the wind. If several storms occur on the same day they are considered as separate when a period or region of clear sky occurs between each.

Tornadoes do not often occur in Canada nor are they usually so destructive as those experienced in other latitudes; they are reported occasionally, however, and it is important that they should be properly described. The date and time of occurrence having been given, the following notes should be added:—Appearance of the tornado, direction in which it moved; direction of whirl, length and width of track, amount of rain, amount of destruction, position of trees and other objects thrown down, &c.

It a meteor is recorded, a full description should also be given, or if not seen by the observer, a trustworthy neighbour might be able to give the information desired. If possible its angular altitude and azimuth when first and last seen should be noted, together with remarks stating whether a report or vibration was noticeable, whether the white vapearry cloud left appeared to shift its position, and how long this cloud could be seen; also the time in seconds that clapsed before the sound was heard after the meteor passed.

Some further suggestions might be added, but we may give these in a later issue.

METEOROLOGICAL OFFICE,

R. F. STUPART,

Toronto, June 26, 1899.

Director.

## METEOROLOGICAL SERVICE, DOMINION OF CANADA.

# Monthly Weather Leview.

#### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraph reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

#### REMARKS UPON THE WEATHER.

Throughout the greater portion of Canada the weather of June was about normal; and although both the mean temperature and rainfall were in excess of average in some districts, and below in others, these exceptions were generally unimportant, and any injurious effect upon vegetation was comparatively local; nevertheless plant life was still somewhat backward in most districts on the last day of the month.

In British Columbia the weather was for the most part cool and fine over the lower mainland and islands and dull over the upper mainland, the temperature being generally below the average and the amount of cloud somewhat excessive. The rainfall was rather less than average in most districts, but in a few places it was in excess. Towards the end of the month the weather became more settled and vegetation, though backward, was much improved.

The weather in the North-west Territories was cool and wet, and in some places the mean temperature was as much as 5 below average; there was, however, much bright sunshine which had a very beneficial effect. At a few places light frost occurred on or about the 5th, but apparently no damage was done. Thunder-storms were unusually frequent, but they were not destructive, and vegetation, though somewhat backward on the 30th, was in exceptionally vigorous condition.

In Manitoba the weather conditions were much the same as in the Territories, the mean temperature being lower and the rainfall somewhat greater than normal. After the 23rd the weather turned warmer and vegetation, which, up to this date was backward, made good progress.

In the Province of Ontario the weather varied considerably, it being dull, cool and unusually wet in the northern portion, and comparatively fine, warm and dry in southern districts; there were some exceptions to these conditions, however, but they were quite local. In counties bordering upon the western portion of Lake Ontario and the eastern portion of Lake Eric, the drought was severe and vegetation was somewhat affected, whilst in Muskoka and neighbouring districts the farming community complained of excessive rains. Ground frosts occurred at a few places, and there were many thunderstorms, but no damage appears to have been caused thereby.

With the exception of the rainfall which was rather heavy and exceeded the average over eastern Quebec, the weather in this province was almost normal, the mean temperature at a few eastern stations, however, where light frosts occurred, was below the average. Some severe thunderstorms passed over districts along the Upper St. Lawrence and damage was caused by half, otherwise vegetation was in normal condition.

In New Brunswick the weather did not differ much from average excepting along the castern coast, where there was much fog and rain. Light frosts occurred on or about the 10th at a few places, but did no damage, and navigation, though rather backward, was making good progress on the 5 th.

The weather in Nova Scotia with a few local exceptions was almost normal; the minfall along the Atlantic coast, however, was somewhat greater than usual, but there was much bright sun-line, and the condition of vegetation, though backward at the end of the month, was much improved.

In Prince Edward Island there was much dull weather, and during the early part of the month it was unusually dry; the total rainfall, however, was rather above average, and vegetation did not differ much from its normal condition.—F. F. PAYNE.

#### ATMOSPHERIC PRESSURE.

The distribution of pressure was below average from the Rocky Mountains to Manitoba, and above average in all the large remaining portion of Canada; the greatest excess, :060 to :080 inches, occurred in the Lake Region, the Ottawa Valley and on Vancouver Island, and the greatest departure below average—:070 inches in the north Saskatchewan Valley.

#### HIGH AREAS.

Six areas of high pressure were sufficiently well marked to be traced; a number well up to, if not exceeding, that for the usual June average.

No. 1. This moderate high passed between the 1st and 4th, from the northward of Lake Superior off the New England coast attended by very cool nights from the Lakes to the Atlantic. No. 2 was another very moderate high which first appeared on our Pacific coast on the 7th, reached the Lake Region on the 10th and passed off the New England coast on the 11th. No. 3 also appeared on our British Columbia coast, the date being the 13th. It spread gradually over the western portion of the Continent to the Lake Region, and then on the 17th passed southwards to the Southern States. No. 4 succeeded low area No. 7; it appeared near Lake Manitoba on the 20th; on the 21st it reached the Ottawa Valley, and on the 23rd passed off the Nova Scotian coast. It was only of moderate energy. No. 5 lay over the North Pacific States between the 20th and 22nd, and then spread very slowly to the Lake Region, eventually breaking up on the 27th. No. 6 was as well marked as any high of the series here considered. It developed in the rear of low area No. 10, and between the 29th and 30th its centre travelled from the Lake Superior region over the Lakes to the Middle Atlantic States.

#### LOW AREAS.

Ten low pressure areas were of sufficient importance to be traced, and what is unusual at this season of the year two of the number were attended by gales of wind, namely, No. 6 in the Gulf of St. Lawrence on the 21st, and No. 10 in the Lower Lakes on the 28th.

No. 1, a continuance of No. 10, on the May chart, after reaching the Ottawa Valley on the morning of the 1st, it passed to the Lower St. Lawrence Valley, and thence southward over the Maritime, Provinces. It was attended in Eastern Canada by fresh to strong breezes and scattered showers and thunderstorms. Nos. 2 and 3-No. 2 was situated in Colorado on the 2nd, whence it travelled to northern Dakota, where it was joined by No. 3, the latter having previously travelled across the country from northern British Columbia. The system then moved into Manitoba where it was very energetic between the 4th and 6th. An off-shoot of the system meanwhile moved north of the Lake Region to the St. Lawrence Valley and the Maritime Provinces, but the main area remained over Manitoba until the night of the 6th when it also passed north of the Lake Region to the Gulf of St. Lawrence. During the presence of the system in Canada very heavy rains were experienced from the Rockies to Manitoba; numerous heavy rains were also general in the Lower St. Lawrence and the Maritime Provinces as well as in the Georgian Bay District and the Ottawa Valley, but elsewhere the rain was chiefly as scattered showers. No. 4 moved from the Northward very slowly over the Territories and Manitoba between the 9th and 12th accompanied by numerous showers, together with heavy thunderstorms, thence on the 13th with great rapidity far north over Canada to the Gulf of St. Lawrence, when showers and thunderstorms occurred generally in the Georgian Bay District and also in the Gulf of St. Lawrence. No. 5 was subsidiary to No. 4. It was situated over Kansas on the 13th, and after passing over the Lake Region and Upper St. Lawrence Valley on the 14th and 15th, it travelled on the 16th to the southward of the Nova Scotian coast. Rain fell generally from the Lakes to the Atlantic during the passage of this depression, and there were also some heavy local thunderstorms. No. 6-This was a shallow depression which moved into our North-west Territories on the 16th, and was attended there and in Manitoba until the following day by numerous thunderstorms. Early on the 18th its attendant thunderstorms spread to the Lake Superior region, and later in the day more locally to the Lower Lakes and Ottawa and St. Lawrence districts. No. 7 was situated over Alberta on the 17th; it appears to have been subsidiary to No. 6, and eventually proved itself to be one of the most energetic depressions of the month in that, as after reaching the Lake Superior region on the 19th, it passed southward as a depression of importance and caused gales on the 21st in the Gulf of St. Lawrence, which in some localities were very disastrous to the lobster industry. It was also accompanied by numerous showers and thunder storms in many localities. No. 8 was situated on the British Columbia coast on the 19th; on the 20th, 21st and 22nd it gave heavy rains and thunder storms from the Rockies to Manitoba. It passed far north over Canada to the Gulf of St. Lawrence, also causing scattered showers and thunderstorms in the Lake Region and the Ottawa and St. Lawrence Valleys between the 22nd and 23rd. No. 9 moved into the North-west Territories on the 25th from British Columbia and until the end of the month it hovered there, its presence being marked by many showers and heavy local thunderstorms as far as Manitoba. No. 10 was subsidiary to No. 9. It was first well marked over Montana on the 26th, whence it travelled across the southern portions of Lakes Michigan and Eric. For a little while it became very energetic, and on 1. 28th it brought a gale in portions of the Lake Region which was locally severe on Lake Eric. At the same time rain fell from the Lakes to the Atlantic, and in many districts in considerable quantities.

#### WINDS

The wind mileage for June was considerable in all portions of Canada and in many districts for the season of the year excessive. In British Columbia fresh to strong breezes prevailed on twenty-three days, the direction being almost entirely westerly. In the North-west Territories the westerly direction prevailed a little oftener than any other; fresh to strong breezes were experienced on nineteen days, and on five other days the force of a gale was reached. In Manitoba the winds blew from a westerly direction on fourteen days, and from an easterly on ten; three gales occurred, and there were seventeen days with fresh to strong breezes. In the Lake Region the force of a gale was reached on one occasion and fresh to strong breezes blew on twelve days; no one direction was especially predominant. In the St. Lawrence Valley and the Gulf the general direction on eighteen days was westerly; one gale occurred; this, however, was from a north-easterly direction; on sixteen days the winds were fresh to strong. In the Maritime Provinces the westerly direction prevailed on twenty-four days. There were fresh to strong breezes on thirteen days. The gale on the 28th in the Lake Region was duly warned, but that in the Gulf of St. Lawrence on the 21st and 22nd was not warned.

#### BRIGHT SUNSHINE.

Bright sunshine was above average over the larger part of the Dominion; the stations at Agassiz and Winnipeg would, however, indicate a deficiency in parts of British Columbia and Manitoba, and while all stations in Southern Ontario show a percentage larger than the average, much of the more northern portion of the Province was undoubtedly unsettled, cloudy and overcast. The largest amount registered was at Woodstock, Ontario, where it was 66 per cent of the possible, and the smallest amount was at Agassiz, B. C., where it was but 29 per cent of the possible.

#### TEMPERATURE.

In no part of the Dominion did the mean temperature differ much from average; the greatest departure was in Assiniboia and Southern Alberta, where it was 3 to 4 degrees below, and the greatest departure above was in various small districts in the vicinity of Lakes Huron, Erie and Ontario where it was about 3 degrees. In Manitoba, Quebec and the Maritime Provinces the temperature was either just normal or a little above.

The Highest and Lowest Temperature in each Province during June, 1899, were:

J	1	, , , , , , , , , , , , , , , , , , ,
British Columbia,	88 .0 on 22nd at Griffin Lake.	28.0 on 5th at Barkerville.
North-west Territories,	921.0 on 29th at Muscowpetung.	26 .2 on 19th at Banfl.
Manitoba,	87 .0 on 29th at Portage la Prairie	30 .0 on 8th at Winnipeg.
Ontario.	95 .0 on 5th at Stony Creek.	26",0 on 10th at White River.
Quebec,	90.0 on 14th at Richmond.	30 .1 on 4th at Father Point.
New Brunswick,	86 .0 on 13th at Chatham.	32 .5 on 11th at Sussex.
Nova Scotia,	85 .0 on 15th at Wolfville. •	31.0 on 5th at Sydney.
Prince Edward Island,	791.6 on 1st at Charlottetown.	41.0 on 5th at Hamilton.

#### PRECIPITATION.

The rainfall has been below average in British Columbia and in the southern part of Ontario from the Upper St. Lawrence Valley to the St. Clair River, and particularly so in the counties bordering on parts of Lakes Erie and Ontario; in Northern Ontario, and generally in the other Provinces it was either equal to or above the average, the most marked excess being along the north shores of the Georgian Bay and Lake Superior and thence westward to Alberta.

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA JUNE, 1899 \* Stations not furnished with Begistering Thermometers a Barometer not reduced to Sea Level

*sittao	2 or of Auroras: 5 or of Thumber -: 1 2 or of Pogs.	and one in a second secondaria and on a secondaria con a
	2010 dinastral (2017).	다음리 - 요리는 6차 년 2월 - 62명 전 58일 전8일으로 1 분 등 유원 및 단도로표점점 2년(제품 다음로 - 요리는 6차 년 2월 - 62명 전 58일 전8일으로 1 분 등 유원 및 단도로표점점 26명을
Hox.	Heir 18 at vestil   Heir 18 at vestil	- 4시대의 - 유명의 (16 전 45 명보는 4 명보의 보호(17 후 14 등 2 전 년 년(124) 대학 기계
Рыстриалия	Interesection	र्न हैं। हार से बहु है । है। है। है। है। है। है। है। है। है
1	Amount.	ରିଆରୀ କରଳ ନଳ କ୍ଷା ରଳଳ ନିନ୍ଦେ ସ୍ଥରତଳ (ଶା ଅ ମଳ ) ସମୟକ୍ଷଳର ( <b>୧୯୯</b> କ
VELOCITY OF WIND.	-ib has starf	## ### ### ###########################
10 ALIA	s'yab tsufailf	4× 111 11 12 11 11 1 1 1 1 1 1 1 1 1 1 1
VELO	salim mesh.	
	Tedunia letel as series.	등 등 등 등 등 7 (응 등 등 ) - 2 등 등 (8 등 6 등 ) - 2 등 등 등 (8 등 6 등 ) - 2 등 등 등 (8 등 6 등 ) - 2 등 등 (8 등 6 등 6 등 6 등 6 등 6 등 6 등 6 등 6 등 6 등
N N		Fee
D FROM	W. X. W.	
WIND	· ·s	문/점 1월 T 1월 17 명 1 1월 8 1 1월 8 1 1 1 1 1 1 1 1 1 1 1 1 1
ow op	'8	Eng in a so in a so in a second of the secon
PHERCTION	s. E.	Hotel   Alexandra   Alexand
Ξ	E	
	.X	мээ э о н н н н н н н н н н н н н н н н н
-əjdu	No of days con	(1000   101
To	Mean a mount	(で(・3)
-nH	Dewloring	
5   \$10 a.	Mean daily range, Mean temperatur	್ರಿ ಕರ್ಮ ನಿರ್ವಹಿಸ ಕರ್ಮನ್ನಿ ಸಂಪರ್ಧ ಪ್ರಸ್ತಿಸಿದ್ದಾರೆ. ಇದ್ದು ಪ್ರಸ್ತಿಸಿದ ಕ್ಷಾಪ್ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿದ ಪ್ರ ಪ್ರಸ್ತಿಸಿದ ಚಿನಿಕ ಪ್ರಸ್ತಿಸಿ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿ ಪ್ರಶ್ನಿಸಿದ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿದ ಪ್ರಸ್ತಿಸಿದ
	Date.	The control of the state of the
3E.	.lsowest.	*468   1855   1875   18
Timperature.	-santa	#####################################
Li MP1	Yearts obser/1.	1 25
	Pifference from average.	
	Меап.	2847   1843   52   51   52   52   52   53   53   54   54   54   54   54   54
TO INC.	Fange.	- 457
CRE.	Lowest.	Tab
PRESCRE	Highest.	285 1 1 2 2 3 1 2 3 3 3 3 3 3 3 3 3 3 3 3 3
	Mean reduced.	1 <sub>- </sub> [[元表 : [1] 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
ra	Elevation above S. Level, in feet.	6 6 6 15 15 15 15 15 15 15 15 15 15 15 15 15
	. We obtain that $W_{\rm c}$	<ul> <li>- 高級自己的公司的公司的公司的公司公司的公司的公司的公司的公司公司公司公司公司公司公司公</li></ul>
	X obutiful	2012-1
	× ×	Posterior control cont
	STALLON	Volumes and seed of the property of the proper
	<del>7</del> .	Agency   Colon   Col
		日本では、10mmの対象を表現である。 10mmに対象がある。 10mmのでは、10

No. 10   10   10   10   10   10   10   10	02H000 (00 (C0 (H00	90 00H 000 08	0 40 0000-0000-: 140-0000 2 00 0-0
Descript   18   10   458   52   52   52   52   52   52   52			a policinativación valueby e din pop
Record   R			5 48 444484.85885   Jagsensen
Carlot   Stand   Carlot   Ca	# # # # # # # # # # # # # # # # # # #	욕레 로움의 하용하 위	용 명약 성공감료공목공식목욕공인 학육중부원공동성임스의 점속 각조함
### 18 18 18 18 18 18 18 18 18 18 18 18 18	A488 P 18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	48 . 4498 : As /	그 그의 하고 선물들들답답금을나라서 그 목욕되면목으로 모르는 모수 말했다.
	5277 2 1 7 5 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1	
The color   The		man descript which were	- 3- nu-engerand troug-samest o
The color   The	26 S 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	A A A A A A A A A A A A A A A A A A A
		eseri_an illi	2 (2) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4
######################################	3 8 8 8 5	68	
######################################		Hn	[1] [8년 [일종요요요요요] [ : : : <b>/용점</b> [enel[2]] - 의 (요
***   **	2 7 7 8	· · · · · · · · · · · · · · · · · · ·	
***   **	27 4 6 0	5π   mr-   ±φ :	[8] 이 하는 한 한 학생들은 이 하는 사람들은 한 이 하는 이
	52 14 10 10 11 11 12 1	~= : : : : a < : - 2 : : a	ा का त्या । स्टब्स्ट्रिक पार्ट के स्टब्स्ट्रिक । विश्व के स्टब्स्ट्रिक । विश्व विश्व विश्व विश्व विश्व विश्व व
*** *** *** *** *** *** *** *** *** *	.o.   4   5   5   1   1   1   1   1   1   1   1	mi-       95   12   4	: [* [84]#6486646 [1]: [1]: [684 [48648]
本	6 0 x 0	우기 : [조립 [독급 ] [종 ]	
10   17   10   10   10   10   10   10	x 4 - x : : : 4	우일 : 연말 : 연안 : [목 ]	
Color   Colo	± : ™ : ⊤ : □ : : : : : : : : : : : : : : : :	- 4-5 : 1 : 18× : 4= : 15 : 1	[호ː[호ː] 호흡수입죠ㅋㅋ
10	(G) 1- 1- 0 : : : : : : : : : : : : : : : : : :	92:	- Hr EEBS :
100-x=0	11111111111111111	Inn 1-0 : In II	
None		CO : : : TO GC : : TO : :	
100-18-0		88 11111111111	
1882年8月			
1	NNAMEN NN NN ANN	88 888 888 88	
### ### ### ### ### ### ### ### ### #			
Constitution   Cons			막 글을 원람부원임원암물호왕성도 원들성암원원본경로부부부
######################################		ny = === kas (==	
		_ 용용 명 환역된 X를 1 (1)	<ul> <li>년 2년 호급물병호회역병단단당한 호선단병병연회회로선단한 경우 역단한</li> </ul>
	645450 66 45 111	00 10 100 000 00	is an undersoned-we conscionable-o iso one
10	11 - 11 ( ) 1 1	++ = 1+= 0 (2010) (0.1)	
Total			
1			- 1 : 1 : 1 : 1 : 주왕(경영 · 역 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 :
### 1			
		#55 <u>+1+++</u> #5+ +++	
22   12   12   11   11   2   2   2   12   2		- 왕왕 : Jilini Harina (H. 1907)	그 : : : : : : : : : : : : : : : : : : :
<ul> <li>場合でおり、日本のは、日本のは、日本のは、日本のは、日本のは、日本のは、日本のは、日本のは</li></ul>	: : : : : : : : : : : : : : : : :		
<b>ಿ ಕಾರ್ಯಕ್ರಮಗಳಲ್ಲಿಗಳಲ್ಲಿ ಎ</b> . ಅದ್ಯಕ್ತ ಕಾರ್ಯಕ್ರಿಕೆ ಚಿತ್ರಗಳಗಳ ಕ್ರಮಿಸಿಕೆ ಕ್ರಮಿಸಿಕ	## 4## 6# 6## 6## 6## ;	41-8=2-282284-888	862862884288888888888888888888888888888
<b>ಿ ಕಾರ್ಯಕ್ರಮಗಳಲ್ಲಿಗಳಲ್ಲಿ ಎ</b> . ಅದ್ಯಕ್ತ ಕಾರ್ಯಕ್ರಿಕೆ ಚಿತ್ರಗಳಗಳ ಕ್ರಮಿಸಿಕೆ ಕ್ರಮಿಸಿಕ		PERSENEUR SEREN	とうまくけいさいをあなりとすがするうちできたいできたべつかながまりがす。ラブマック
NW. Trentomes—Con-Regime Regime Reg		Aces Cambballania	的。我们就是是否是有有效的。 我们就是一个不是是我们的,我们就是不是不是一个不是不是不是不是不是我们的。
NW. Treatmonts— Indian Head.	Com		
NW.TERRITORI Regima Head. Indual Head. Manipulodi. M. Manipulodi. M. Manipulodi	ES		
N. W. TERR Regine Indian He Indian H	ad. n Ma n Ma n Ma n n Mon akon	Para la	
N. M. Control of the	TERR I He I He	Party North Party	den in the state of the state o
	W. Charles and the control of the co	Minno	
	z	Na Attended Sandante S	- v i 👶 i 🐤 v > x c 5 % c c x > v x + c - • + + + + + + + x x x x x x x x x x x x

PRESSURE, TEMPERATURE, VIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, JUNE, 1899.

a. Barometer not reduced to See Lovel. \*Stations not furnished with Registering Thermometers.

		· <del>-</del>	
	Saoa fo. oV		
'eur.	No. of Auroras.		WG 41-UNIO000-
	No. of fair days.	A SES CESESAASASASSASSASSA # ES SC SANSASSASSA	71-29486988
	To fo directly (1 or	ි දී දැස්තිව දිහිපුවස්තිම්කරුවන්වන්වන්වේ සිට අය දෙස් සම්මාන්ත්වේ දී දැස්ත් දෙස් දිහිත් සිට දී දැස්ත් දෙස් දිහි විශ්යාවේ අත්තර කරන කරන සිට සිට සිට සිට අත් දිහිත් සිට සිට දිහිත් සිට	288825448888 2888244884488
Tex	Heaviest fall in		C-scc
TTA	Tifference from Average.		2241888148
PRECIPITATION	Junouik.	~ % 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	25 2 2 2 5 2 5 2 5 2 5 2 5 2 5 2 5
1	, , , , , , , , , , , , , , , , , , ,	To i igon auxor-consumpropession a indice beausinance	01::00:00:14-4:31-06/
INI	-ib bus etall .mint moiteer	80 0	SW S
VELOCITY OF WIND.	zelocity.		2001 : : : :
, E	Highest day's		34.0 34.0 34.0
ELO(	Mean miles per hour.		15 ± 15 ± 15 ± 15 ± 15 ± 15 ± 15 ± 15 ±
-	1	1 <u></u>	
	Total number of hours.		2322333333
ĺ	.5		್ಷ= 2440 <b>ಇ</b> ಟ್ಟಿಕ್ಕ
RO M	Z.W.Z		8 4 0 E P - 4 4 4 6
9.0	W.		808802888
, W <sub>1</sub>	S.W.		21 x 27 x
. 5 8	·s		Ecco4-5
PIRRCTION OF WIND FROM	.a.s.		₹ w = w & - = = = =
1181	Ε.		ဝဝက <b>လိုင်မျှင်</b> မျှင်
ŀ	N.E.		71 0 5 8 8 8 8 8 7 4 6 8 8
	Ζ,	[ ] 5 ] 1-40 [ [ ] 2 X O + [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [	E01-404-0140
		111121 1021 - 110-0111 21111111111111111	- :04-4 : : : :
-ətəlqn	Xo. of days couly ly clouded.		9 4060
30 11	midity. Menn amour Cloud.		<u>": :::::</u>
-nH	evitaler mesk		8 : 2 : : : :
lo art	Mean temperati   Pewpoint		75
	Meau daily range.	\$ 1858 55555555555   30 100 100 100 100 100 100 100 100 100	4-06-5
	Date.	* 1889 1984 1886 * 1888 1 * 18	임무리투작작조작으록
	Lowest.		28824834444 50064E0000
TEMPREATURE.	-		**************************************
TAR	Date.	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	22001-02002
KAPE	Years observe.		255225252552
Ţ	Trum average,	= 1.6x = 10.00   0.00	-464-**********************************
	ріщетенсе	- n	1-111-+-1 
	Mean.	\$ : 1868 : 1868 : 188 :	25252525252525252525252525252525252525
	Romes.		7. : :09 :2. : : : :
ند		- E	0:0:0::::
SCRE	Lowest.	_f ti la i a all'all'all'asi lasti i i i i i i i i i i i i i i i i i i	a : 8 : 8 : : :
PRESSURE.	Highest.		30.50
-	Mean reduced.	4	8 8 8 8
	i Aevel in feet		8 8 8
EoS	Eleçation above		187 150 150 150 150
	Longitude W.		88885058888 8888658888
	Z shuited	₹₹; ₹₹\%A\$\\A\$\\A\$\\\\\\\\\\\\\\\\\\\\\\\\\\	55555555555555555555555555555555555555
	X -(, 1-1	$\frac{\mathbf{Z}_{\mathbf{z}}}{\mathbf{z}}, \mathbf{A}_{\mathbf{z}}, \mathbf{B}_{\mathbf{z}}, \mathbf{B}_{\mathbf$	ಪಡಡಿದ ಹಹ ಹಡುತ್ತಹಾತು
	z	of Con-	
	:10	M. M. H.	Mon Fe
	STATION	reform weither the control of the co	ond. timi timi timi Poin Poin Poin Mag
	1.	OFFARIO : — ("on. Brant ison - Dick westile - Dick westile - Some step - Some	Murreel Murreel Michael Michae
		ERLOXUXUXUQUEEEEEEEEEEEEEEEEEEEEEEEEEEE	Montre Richma Erome Ouelec Chiroun Father Point Ouelec
	•	-	-

			73	
ີຢ (ຢວ : ¦ພ	<b>-0</b> 25550 <b>-</b> 00	0#9 <u>2</u> 01:0 <u>#</u>	== ==	- 2020 . 21
0 23 . 0	\$0-\$00-300 \$0-\$00-300	==ಕೆಕಾಗ್ಗಿಂ =3⊜೦೦ ೦೦	00 00	
8 88 E	955222735C	122 <b>1</b>	48 <b>#</b> B	# <b>#</b> ## # #
.a .3 . 5	928558455	1= <u>=</u> =	24 = 43	
0 0 0 E	8482828 242282823 242282824	78848   58 	: 100 - 100	
a 16 19 1 1 1	######################################	54555 27 00000 no		
:1 :- :::			- 1111 1 - 1 1119기 1 전 (최	1   1
를 다 하는 :: 등 :왕조 : : :	6 to - 2121 to 2121 -	94486 R4 00000 44		7 14 112 1
* * * * * * * * * * * * * * * * * * * *	2.22 3.3 N. M.	813558 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		*** : : : : : : : : : : : : : : : : : :
5	24 S E x E	2 E E E		
1121	0 3 25 -	5 - E	11 11 12 12 12 12 12 12 12 12 12 12 12 1	= !   .
888 12	និនិដ្ឋកិត្តិនិង	8888 B	::- :: <u>ā</u>	8 8 8 8
.c. ° .	○원~○축원 :=	<u>ਸ਼ਫ਼ਫ਼∸ਜ਼</u>	- : - : : - : - : - : - : - : - : - : -	5 5 5 5 5
55 2 2	코드랑호 <u>호</u> 이 : 크	8 <b>3°=</b> °::"	11 1 41	a ar- a r
	225-23 : :-	E8500 10	iii a. T	១ ១ភ (ភ ។
- <b>→</b> 00 ×	ត្ត <sub>ម</sub> ត្តត្តទ	តន្តន <b>ត់</b> នេ		2-42 <u>118</u> 2
1282 : 0	eu2525	발목 <b>일</b> 라 . T-		* 4E: 37 3
		1- 1- 1- 1-	- E - E - E	÷ ÷ 5 6 6 6
:≘⊊∞ : :21 :	21×22= -	©x→-x ;::	iiii *i	1 00 <b>3</b> -
1-2a 3	<b>1</b> 228232 : →	23508 0	<u> </u>	n Em 15 (1
*22 : :2	99855c : -	무역대부부 : 혹	š : :	#T ## : 4 =
	41-0404	- 49 B c		1-10
	10 0 0 0 11- <b>3</b>	CX1-1-4		
	825 3	X2 (\$ )	: : : · · · · · · · · · · · · · · · · ·	F1
	5			11 1
• EE E	តតម <sup>ខែ</sup> មិតកម	5-699 (4) 5-8-49 (4)	1 (25) 25) 1 (21)	
7 0- 90	88978==8=	Hear an	1 1 2 2 4 1 5	
• <b>4</b> 28 58	888444888 9000000000	84884 54 84884 50		0 00 B B = 38 6 8
ន្ទា (កន្ទា (កន្ទា	<u>∓ಪಅಚಿ≎ಪಡಿಬ್ಬ</u>	18-m2 :⊒≅		· 88 12 8
78 83 8	998699977	54888 82 Haros, 59	777	
- 6 - 511-	935572	88825 12 8-806 6	N- 5 -	- 52 <b>2</b> 7
0 7 77 1	11+-11	111-1		m : : m = 0
. 12 12 12 1	61-520-00-0 888585888	25: 25:25:55 25: 25:25:55		of core and co
4	32 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	5388 : : : : : - 198 - : : : :	벨븨쇷	
4 1 1 1 1 1 1 1 1	ଅଞ୍ଚଳ : ଓ : : : : ଅଲ୍ଲୋଲ :	7387 ::: 8888	ininin <b>e</b> in	# : : : · · · · · · · · · · · · · · · ·
e i i i i i i i i	888 8 H	8888 : + +	:::::: #:	. H:: 6
<del>jiriiii.</del>	283 (5 · · ·	8.868 · · ·	::::::	_8 **
# : : : : : : : : : : : : : : : : : : :	888 8 : :	6888_ H	rratiat arra	1 9
3	프리쿠용은 등 등	5.38 <b>6</b>   \$485	lass of t	1 28 : 16 E
. 538833×55	\$58888605 \$5888555 \$588555	\$3888888 <b>6</b> 8	184985 E84: Hasasc 803:	4 ಭಾನಕ್ಕಿ ಕ ಕನ್ನಡಚಿತ್ರಕ
• # # # # # # # # # # # # # # # # # # #	Nav Brokswicze.   Prodeficient   6.57 (6.38)   Prodeficient   7.5 (6.38)   Prodeficien	Hallax   H	Christian M. Station 157-7 (1988)  Perfection M. Station 157-7 (1988)  Perfection 157-7 (1988)	National
			1811. 111	
DEBRC-(Continued.) Grindstone, W. H. Anticosti, N. H. Anticosti, S-W. Point, Anticosti, E. P. Sird Rocke Robertal	EW BRINSWICK: Frederican Clantam Clantam Clantam Clantam Trian Loperaux St. John Dullonsia Na. Stephon Nameton			
	g Hagaran			
C	SWIE			S S
Roc Roc Roc	K top			
QPEBRO—(Continued.) Grindstone, Anticosti, W. Pio, Anticosti, B. W. Pio, Anticosti, B. P. Bind Rocks Roberall Perce.	New Burnswick Fredericton Chutham Orand Maunt. St. John Dalhousia St. Scoplen St. Scoplen		Gitty Shorping Sable Island Parshopei Wolfvelle, Bridgetown Bridgetown Charletterov Georgetown Simmerside	NEWTOO NOT AND SELECTION OF THE SELECTIO
ō	Z			X = = = = = = = = = = = = = = = =

## observations at stations reporting rain, weather, &c., during june, 1899.

		ł	CAINFAL	L			
STATIC	9NS.	Amount in inches.	:01 or	Fair	Heaviest Fall in Month.	Date.	Thunder or Lightning, &c.
Bartish Cop Mala Cumberland. Beaver Creek Langley Royal Oak . Goldsteam Nanaimo		0.34	10 6 4 5	26 20 24 26 25 25	0 48 0 20 0 42 0 15 0 25 0 48	28 26 10 9 10 26	4
N. W. TERRITORISS. West Deaver Hills Clear Spring. Lethbridge Courts. Didsbury Suskation Estevan Imissail.		4 02 3 73 2 71 2 26 1 84 1 82 1 00 2 79	13 11 10 8 7 10 1	17 17 20 22 23 18 29 21	1 49 1 01 0 85 0 55 0 60 0 50 1 00 1 47	26 30 20 21 10 4 29 22	14, 15, 16, 21, 25, 11, 12, 13, 20, 21, 27, 28, 29, 30, 25th. Heavy had on 11th.
ONTARIO— George-town Roblin's Mills Aunora. Arden Wooder Jernyy Valley Lansdowne Mostague Glen Elin Watford Dutton Wilton Grove. Go berech Orangeville Wiarton Scarboro Parmaa. Ursa. Providence Bay Oliver's Ferry Port Barnvell Kitley Lyneclock Emissione Emissione Emissione Civipidge Huntsville Elgin Thompson Deer Park Penetranguishene Cold-tream Crydon Sparrow Lake Nottowsara. Lion's Head Mulloud Princeton. Wyoning New Bar yswick		1 94 1 30 1 30 1 12 2 00 2 18 3 30 3 39 3 39 3 39 3 39 3 39 3 39 3 39	20000000000000000000000000000000000000	######################################	0 77 2 8 1 9 7 1 4 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	864548448848884844444488888444845888688555	4, 5, 6, 7, 14, 5, 14, 4, 14, Frost on 9th, 5, 8, 15, 19, 20, 21, 23, 26, 5, 6, 7, 23, 4, 5, 6, 12, 15, 20, 4, 7, 14, 25, 17th, light frost, 1, 5, 6, 7, 28, 5, 6, 7, 12, 13, 14, 22, 4, 5, 6, 17, 12, 13, 14, 22, 4, 5, 6, 7, 14, 17, 10th, Frost on 22nd, 7, 8, 12, 18, 20, 22, 5, 6, 7, 14, 17, 10th, Frost on 22nd, 7, 8, 12, 18, 20, 22, 4, 5, 6, 14, 18, 28, 4, 6, 20, 22, 7th, half from 1 to 6 in, diameter 5, 6, 22, 6, 14, 18, 23, 25, 5, 14, 18, 4, 5, 6, 7, 14, 18, 22, 3, 4, 5, 6, 12, 13, 14, 17, 21, 5, 6, 24,
Point Escummac Nova Scotia—		2 30	11	19	1/30	21	16, 25, 26, 29,
Port Morien		5 18	5	25	2 90	22	
P. E. Island— Moint Stewart . Munay River.		9 20 2 50	6 10	21 20	1 52 0 94	16 16	

Thunder recorded on : -

- I. Brandon, Agincourt, Pipestonie, Treherne, Perce, Dutter, Quebec, Mr. ——sa, Port St. ——
- 2. Moneton, W. Beaver Hills, Edmonton.
- Hill View, Portage la Prairie, Lakefield, Point Clark, Channel Isla. N. Sister Res. Physicane, Midland, Calgary, Orangeville, Port Hastings, Barnarde, Minnedosa.
- 4. Agarcourt, Clonturf, Cockburn, Island, Uplands, Whiteside, Colling and Lakefield, Polis Cork Hamilton, Owen Sound, Beutrice, Bancroft, Stony Creek, Abitibi, N. Sister Root, Haliburton, Otomabee, Midland, Lion's Head, Calgary, Peterboro', Welland, Kimmount, Sprucedale, Meaford, Lucknow, Ponetanguishene, Scarboro, Providence Bay, Ensidale, Uxbriage, Huntsville, Wiarton, Beaver, Creek, Georgetown, Aurora Jermyn, Cherry Valley, Miclood, Lindsay, Stratford, Coldwater, Gravenhurst, Durham, Guelph, Description Quebec, Winnipeg, Port Arthur, Parry Sound, White River, Port Stanley, Barrie.
- 5. Ridgetown, Birnam, Frasmus, Agincourt, Cannington Manor, Cockburn Island, Collingwood, Lakefield, Point Clark, Hamilton, Owen Sound, Beatrice, Bancroft, Stony Creek, Fosfield S., Mitibl, Brone, Haliburton, Otonabee, Hiddhand, Lions Head, Brantford, Calgary, Paris, Peterboro, Port Power, Kimmonn, Port Hope, Meaford, Sparrow Lake, Penetinguishene, Scarboro, Providence Bay, Dealtown, Wooten, Georgetown, Roblins Mills, Arden, Wooler, Jermyo, Dutton, Wilson Grove, Regina, Moose Jaw, Meetreal, Woodstock, Lindsay, London, Stratford, Coldwater, Gravenhurst, Guelph, Guard Manan, Saugeen, Kingston, Port Arthur, Port Stanley, Wyoming, Barrie.
- 6. Hillview, Ridgetown, Frasmus, Agineourt, Cannington Manor, St. Stephon Sussex, St. Ann., Collingwood, Lakefield, Point Clark, Hamilton, Owen Sound, Beatrie, Coefield, S., Br. nr. Pipestone, Otombee, Midland, Lion's Head, Brantford, Paris, Peterboro, Welland, Menford, Croydon, Schiboro, Deadtown, Huntsville, Georgetown, Arden, Wooler, Jermyn, Dutton, Wilkon Grove, Woodstock, Linesby, Strafford, Coldwater, Dunham, Guelph, Halifax, Yarmooth, Grand Manan, Saugeen, Kingston, Pariy Sourd, White River, Port Stanley, St. John, Wyoning, Barrie.
- 7 Stouffville, Ridgetown, Birnam, Erasmus, Clontarf, Uplands, Lakefield, Pant Clark, Owen Sound, Baneroft, Gosfield S., Abitibi, Otomobee, Lion's Head, Paris, Peterboro, Welland, Port Hope, Sprucedale, Lucknow, Scarboro, Providence Bay, Emskale, Orangeville, Wiarton, Georgetown, Wooler, Lunsdowne, Dutton, Wilton Grove, Lindsay, Stratford, Ducam, Deseronto, Crand Manan, Kingston, Swift Current, Port Arthur, Parry Sound, Port Stanley, Barrie.
  - 8. Agincourt, Lakefield, Peterboro, Arden, Burnardo, Lindsay,
  - 9 Brandon
  - 10. Gatesgarth, Red Deer, Pipestone, Regina, Barnardo, Prince Albert, Swift Current, Medicine Hat.
- 11. Brandon, Gatesgarth, Portage la Prairie. Regina, Moose Jaw. Battletoni, Swift Current, Medicin Hat, Qu'Appelle, Winnipeg
- Brandon, Uplands, Whiteside, Lakefield, Point Clark, Owen Sound, Beatrice, Bancroft, Midland, Meaford, Lucknow, Ursa, Providence Bay, Emsdale, Huntsville, Wiarton, Jermyn, Locisay, Durhum, Descronto, Qu'Appelle, Port Arthur.
- Chicoutimi, Stouff des Birnare, Erasaus, Cohingwood, Lakefield, Owen Sound, Abitibi, Midland, Kinmount, Meaford, Lucknew, Wiarton, Point Eseminae, Coldwater, Durham, Fatner Point, Port Arthur.
- 14. Ridgetown, Birnam, Erasmus, Agincourt, Caman, ton Manor, Hamilton, P.C.L., Uplands, Collingwood, Lakefield, Point Clark, Charliam, Hamilton, Owen Sonnel, Beatrice, Bancroft, W. Beaver Hills, Red Deep, Haliburton, Midland, Lion's Head, Brantford, Calgary, Paris, Sprucedale, Menford, Lucknow, Sparrow Lake, Sunshine, Scarboro, Emskale, Deultown, Wiarton, Georgetovyn, Aurora, Lansdowne, London, Stratford, Coldwater, Lindsay, Durham, December, Sydney, Parry Sonnel, White River, Port Storley, St. John, Barrie.
- Birman, Cannington Manor, Duck Lake, Wolfville, Sc. Ann.s. Hamilton. Stony Creek, Summerside, Welland, Sunshine, Arden, Jernayn, Woodstock, London, Grevenhurst, Cod-lph. Tetro, St. John.
  - 16. Hillview, Pictou, Escaminac, Barnardo, Truro, Yarmouth, Winnedosa,
- 17. Duck Lake, Bancroft, W. Beaver Hills, Midland 8 taboro, Stony Mount at a Quebec. Withinger Min nedosa, Port Arthur.
- Brandon, Birnam. Agincourt, Portage la Prairie. Lakefield. L'on's Head. Treherne. Kunnount. Men ford, Sarnia, Providence Bay. Dealtown, Georgetown, Lindsay, Bissett, Winnipeg. Farrie.
  - 19. Cape Magdalen, Gostield S., Calgary, Paris, Sprucedale, Sunshine, Arden, Lingston.
- 20. Hillview, Chicoutimi, Cannington Manor, St. Stephen, Hamilton, P.E.I. Clontarf, Bancroft, Stony Creek, Abitibi, Haliburton, P.e.is, Peterboro, Croydon, Providence Bay, Emsdale, Hunt-ville, Arden, Regina, Montreal, Lindsay, Stratford Descronto, Ottawa, Kingston, Quebec, Swift Current, Qu'Appelle, Parry Sound.
- Hillview, Renfrew, Hamilton, P.E.I., Sussex, Muscowpetung, Brome, M. Hand, Arden, Fredericton, Chatham, Quebec, Winnipeg, St. John.
- Erasmus, Cannington Manor, Duck Lake, Cockburn Island, Uplands, Whiteside, Collingwood, Lake field, Point Clark, Owen Sound, Beatrice, Pipestone, Lion's Head, Port Hope, Spingedale, Meaford, Penetangui

stene, Ursa, Providente Bay, Wiarcon, Regina, Coldwater, Gravenhurst, Sougeen, Prince Albert, Battleford Swift Current, Medicine (Iat, Qu'Appelle, Parry Sound, Barrie)

- 23. Beatrice, Baratest, Brome, Peterboro, Kinmount, Sprucedale, Regula, Croydon, Sunshine, Emsdalee Orangeville, Arden, Wooler, Montreal, Kingston, Barnardo, Lindsay, Quebec, Barkerville, Prince Alberts Qu'Appelle, Municiosa.
  - 24. Dalhousie, Lakefield, Calgary, Father Point, Quebec, Wyoning,
- Moneton, Hamilton, P.E.L., Uplands, Yarrow, W. Beaver Hills, Calgary, Yarmouth, Summerside, Croydon, Courts, Point Escuminac, Lansdowne, Port Hastings, Fredericton, Edmonton, Port Arthur, St. John.
- 26. Hillview, Pieton, Cannington Manor, Duck Lake, Hamilton, P.E.L., Sussex, Red Deer, Pipestone, Summerside, Point Escummac, Arden, Regma, Fredericton, Barnardo, Truco, Charlottetown, Bissett, Prince Albert, Battletord, Switt Current, Medicine Hat, Qu Appelle, Minnedosa, St. John.
  - 27. Duck Lake, Channel, Summerside, Clearspring, Regina, Fredericton, Winnipeg.
- 28 Gatesgarth, Point Clark, Gosfield, S., Treherne, Clearspring, Dealtown, Dutton, Barnardo, Swift Current, Minnedosa.
- 29. Brandon, Hillyww, Moneton, Summerside, Charspring, Sanshine, Point Escuminae, Stony Mountain, Charlam, Swift Carrent, Winnipeg.
  - 30. Hillview, Renfrew, Clearspring Burnardo, Stony Mouatain, Swift Carrent, Winnipeg.

#### Aurora Recorded:

Where the class of annua is noted by the observer, it is given, (I) becon the brightest, (IV) the fieldest in haddinary.

- Savanne.
- 3. Quebec, IV
- 9. Savanne, Minnedosa, III
- Duck Lake, IV.
- 27. Cannington Manor, Savanne, Minnedosa IV
- 28. Georgetown, 11. Huntsville, II. Meaford, I.: Port Hope, Port Dover, Midland, I.: Channel Island, IV.: Hamilton, St. George, Collingwood, Cockburn Island, Clontarf, III. Cannington Manor, I.: Erasmus, Stouffville, Savanne, London, II.: Stratford, Gravenhurst, II.; Durham, I.: Guelph, Deseronto, II.: Saugeen, II.; Kingston, II.: Quebec, I.; Barrie, II.
- 29. Georgetown, 111, Meaford, 11. Port flope, Welland, 41; Channel Island, 4V; Collingwood, Clontarf, IV; 8r, Stephen, 4V; Erasmus, Stouffville, Stratford, Durham, 4V; Guelph, 4V; Grand Manan, 4V; Kingston, 441, Quebec, 41; Swift Current, Barrie, IV.

	art - t			
Victoria				
KUPEE ISLAND				
AG 4931Z				
BATTLEFORD	· t			
IND: AN HEAD				
Brandon				
Winnipeg				
DURHAM	8 .			
WOODSTOCK			· · · · · · · · ·	
Toronto.	•			
LINDSAY			1 -	
Barrie	÷		* * * .	
KINGSTON				
O <sub>TTAWA</sub>				
MONTERAL		·		
FREDERICTON	8			

	Victoria	KULER BEAND.	Aovenz	Byrrpiscion	Ivery than	Brasios.	Wiyanka.	DURHAN.	Woonstock	Towasta.	lave-ex.	Patenti.	KINGHION.	CITANA.	Movemball.	FRICERR TON.
MEAN PROPORTION FOR MONTH (Constitutes a ship o being 1.	1 4r			74	1	4				-	1,4	12			0.64	
DIFFFRENCE FROM AVERAGE	0.04		-		ŀ				+			9.13		_		
MAXIMUM DAILY AMOUNT	11.42		~		,		~		1) **	~ .	•	4		1.50		1
DATE	15					_*	- 1	- 1	22	-	2	10	-			
No. of Days Completely Clouded	1		-					2	- 1	:	2			1		

#### FORECASTS FOR JUNE, 1899,

the forecast the this office at 11 p.m. each night are posted to at every telegraph station in thous beginning at 8 a.m. the following day.

The number of p lions is real during the month was 207. These were divided as follows:-

	\		VERIFIED.					
bls t	Issue	No.	No.	No. Not	Percentage			
Max ma	٠,	- 4	26		70.4			
A.F.StpfRid		72	20	8	NO (1			
AMERICAN			1.4	.5	87. 6			
SELECTAR BAY		~ 1	19	7	85.7			
OTTAWA V YELLEY	1 -	* *	6	11	56 7			
Upper, St. Lawrence			•	1	18) 6			
I WER ST. LAWRENCE	*		18		×5. =			
era and a second and a second				` `	52.6			
Monthly Provinces			17	×	85.2			
' vi	6.1	655	172	1.7	54.2			

In order two others, percentage of variously of the probations, the number partly verified is divided by two and indeed to the constant very verified, of a traveless divided by the total number issued.

In ascentanting to that extent the poor construction to the conferent here pairs from the agents at all observing stations, as well as the degraphic reports to used

R. F. STUPART.

Director.

Moto relegion Office. To ente, 28 July, 18 9.

## METEOROLOGICAL SERVICE, DOMINION OF CANADA.

## Monthly Tdeather Review.

VOL. XX<del>IV</del>

JULY, 1899.

No. 7

#### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraph reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

#### REMARKS UPON THE WEATHER.

The weather of July like that of June did not differ much from average in Canada excepting in the rainfall, which was unusually heavy throughout the larger portion of the more eastern provinces. This heavy rainfall, coupled with much bright sunshine throughout the greater part of the Dominion, was most beneficial and although some districts suffered from drought vegetation generally was in about average condition on the 31st.

In the Province of British Columbia the weather was for the most part fine, warm and dry, but did not differ much from normal, and the condition of vegetation was excellent. Unusually high temperatures occurred on or about the 16th and 26th. 101-5 being recorded at Griffin Lake, and 99-1 at Kamloops on the 15th.

In the North-west Territories there was much bright sunshine, but in some districts much rain fell, whilst the mean temperature was about average. Thunderstorms occurred frequently, and in a few places, were accompanied by hail, though little damage appears to have been caused thereby. The maximum temperatures of the month occurred on the 17th or 18th. 102 being recorded at Chaplin, and at most places they were well above 90. Vegetation was in excellent condition on the 31st.

The weather in Manitoba was normal, both the temperature and rainfall being about average, and other conditions differing little. Thunderstorms occurred at most places, and together with plenty of sunshine were most beneficial. The dates upon which maximum temperatures occurred varied, but the readings were much the same as in the Territories. Vegetation was in about average condition on the 31st.

The chief characteristic of the weather in Ontario was the exceptionally heavy rainfall in northern and eastern districts, and drought or light rainfall cl-swhere, the latter conditions also prevailing in districts north of Lake Superior. Cool nights and in most districts comparatively cool days with much bright sunshine prevailed making altogether ideal weather. On July 11th, at about 4.45 p.m. a most destructive hail storm passed over the district, 15 miles north of the town of Chatham. The storm's path was from north-west to south-east, was chiefly confined to the town-ship of Chatham, and although felt, more or less, 15 miles upon either side of its path the area devastated was not more than a mile in width. The usual electrical display and heavy rain accompanied the storm, but no damage appears to have been caused thereby. According to reports, hail fell in some places to a depth of six inches upon level ground, some of the stones being one and a half inches in diameter, and many as large as walnuts. As might well be supposed the destruction was enormous, the "smiling farms" as one observer puts it "were converted into barren fields" and in many cases farmers lost all their crops. Corn was torn and left in tatters, whilst wheat and other cereals were completely threshed out, the stalks only being left standing. A thunderstorm also passed over the country in the vicinity of Gravenhurst, doing much damage to farm property. Vegetation, where not affected by drought, was in very good condition on the 31st.

In the Province of Quebec the rainfall was above average, and the mean temperature somewhat below; there was much fine bright weather, which brought vegetation forward; nevertheless, plant life in most districts, was below normal. Maximum temperatures nowhere reached 90.

The weather conditions of New Brunswick were much the same as in Quebec the rainfall being even heavier and much exceeding the average. Low temperatures, and much cloud and fog on the coast prevailed making some exceedingly unpleasant weather; and added to several destructive thunderstorms, the conditions were not favourable to vegetation.

Up to the 21st in Nova Scotia there was some exceedingly unpleasant weather with much rain and fog; after this date, however, it became fine and continued so to the end of the month. Both the temperature and rainfall were above average in most places, and although vegetation was somewhat backward, it made great progress after the 20th.

In Prince Edward Island the weather was for the most part cloudy with much rain, and although the mean temperature was above average, vegetation was quite backward. The highest maximum temperature reported was 82.28 from Charlottetown.—F. F. PALYE.

#### ATMOSPHERIC PRESSURE.

The mean atmospheric pressure was above average from the Rocky Mountains to Lake Superior, and average or a little below elsewhere over the Dominion, except along the Nova Scotian coast, where it was slightly above. The greatest amount above average '050 to '060 inches was recorded in Assimiboia, and the greatest amount below average '030 inches, was at Montreal.

#### LOW AREAS.

No less than ten depressions were sufficiently well marked to be charted, and there were others, of which the tracks were too doubtful. All of the ten travelled from the West or North-west either over the northern portion of, or to the northward of the Lake Region to the Gulf of St. Lawrence. The areas were also attended by much rain over nearly the whole of Canada. Southern Ontario proving the exception to the rule. The northerly track of the depressions may have been to a certain extent the cause of the paucity of the rainfall in Southern Ontario.

No. I. A continuance probably of No. 9 on the June Chart. It was situated over Lake Superior on the morning of the 1st, and then moved quickly far north over Canada to the Gulf of St. Lawrence. During its presence thunderstorms were recorded on Lake Superior, and also over the Island of Anticosti. No. 2 was a very shallow depression, which passed over Manitoba to Lake Superior between the 2nd and 3rd, and then dispersed. It was attended, however, by local showers, and thunderstorms as far as the St. Lawrence Valley. No. 3 was first well defined on the norming of the 4th over the Upper Mississippi Valley as a very shallow depression. It was, however, attended by a very pronounced rain area, and as it moved slowly into the Lower Lake Region excessive rainfalls occurred on the 4th and 5th in the Georgian Bay District. It also caused heavy rains in the Ottawa Valley as well as in Quebec and the greater portion of the Maritime Provinces, No. I was situated in Northern Minnesota on the morning of the 6th; it formed in an existing low pressure trough. Its ultimate course was south-eastward over the Lake Region to the State of New York, and thence across the Maritime Provinces. It gave rain very generally from the Lakes to the Atlantic between the 7th and 10th together with moderate gales in portions of the Gulf and the Maritime Provinces. Between the 11th and 14th thunderstorms were numerous and heavy in the Ottawa and St. Lawrence Valleys and the Maritime Provinces and locally in the Lake Region attendant upon a shallow depression, which first appeared in the St. Lawrence Valley. No. 5 was a shallow depression, which moved into the Lower Lake Region on the 16th, from the Western States, thence down the St. Lawrence Valley and near the Straits of Belle Isle. It was attended by numerous showers and thunderstorms throughout its course, and by very strong westerly winds in the Gulf of St. Lawrence. No. 6 traversed the Territories and Manitoba between the 16th and 19th, accompanied by occasional showers and thunderstorms. Between the 20th and 21st, when it moved over Lake Superior to the St. Lawrence Valley where it dispersed, heavy rains and thunderstorms occurred in all localities to our Atlantic Coast except in Southern Ontario where there were local showers only. No. 7 was accompanied by numerous heavy showers and thunderstorms in the Territories and Manitoba between the 20th and 23rd, and it then passed far north over Canada reaching the Gulf of St. Lawrence on the 26th, showers and thunderstorms meanwhile occurring from the Lakes to the Atlantic, more especially in the Gulf and Maritime Provinces, where the rainfall was considerable. No. 8 passed into the Lake Superior district on the 26th from the Western States, thence to the Ottawa Valley and across the Maritime Provinces. Like many of its predecessors it gave numerous showers and thunderstorms from the Lakes to the Atlantic in nearly all localities except the southern portion of Ontario. No. 9 moved into the North Saskatchewan Valley during the night of the 26th, accompanied by high winds and showers. It travelled with great rapidity in a far northerly course and reached the Unif of St. Lawrence on the 30th. Its accompanying showers and thunderstorms were locally experienced in Ontario, but very generally in Quebec and the Maritime Provinces, and it was especially noticeable for the high winds which it brought, these attaining the force of a gale in some localities, more especially perhaps in

the Georgian Bay Region. No. 10 was a shallow depression which moved into the North west during the night of the 29th and then passed south eastwards giving showers and thunderstorms generally from the Rockies to Manitoba.

#### HIGH AREAS.

There was very little high pressure during the month, four areas were charted but they were of feeble energy only.

No. 1 was a very moderate high which was situated in Northern Manitoba on the 7th whence it passed southward and dispersed on the 10th over the Middle States. No. 2 was another shallow high which was situated in Alberta on the 5th and then passed south-eastward to the Middle States where it also dispersed. No. 3 was a small area which appeared over Lake Superior on the 21st in the rear of low No. 6 and travelled south-eastward over the St. Lewrence Valley and the Maritime Provinces. No. 4 moved into the North-west Territories on the 28th from Northern British Columbia and travelled in the rear of low area No. 9 to the Lower Lake Region where it hake up. It was accompanied by quite cool weather, and when in the Territories and Manitoba, night temperatures dangerously near the freezing point were recorded.

#### TEMPERATURE.

Temperature was a little above average over British Columbia. Manitoba and the extreme eastern portion of the Maritime Provinces, and average or a little below in all the larger remaining portion of the Dominion. The greatest amount above average, namely 6°, was recorded at Port Simpson, B.C., and the greatest amount below average, 4°, was at Barrie.

The Highest and Lowest Temperature in each Province during July, 1899, were:

British Columbia.	101:5 on 15th at Griffin Lake.	34 0 on 11th at Barkerville.
North-west Territories,	102 .0 on 18th at Chaplin.	33 .0 on 2nd at Banff.
	\$ b.	" 28th at Alameda.
Manitoba,	95.0 on 24th at Rosebank.	35 .0 on 30th at Barnardo.
Ontario,	97 .0 on 4th at Cottam.	28 0 on 19th at White River.
Quebec,	89 .8 on 5th at Chicoutimi.	38 .3 on 22nd at Chicoutimi.
New Brunswick,	89.7 on 2th at Fredericton.	40°.1 on 1st at Sussex.
Nova Scotia,	57, 0 on 27th at Halifatt,	37 ≥ on 21st at Truro.
Prince Edward Island.	52.8 on I2th at Charlottetown.	47 .0 on 23rd at Charlottetown.

#### PRECIPITATION.

The distribution of rain over the Dominion during the month was, in many respects, very remarkable. This was especially the case in Ontario, where, in several counties contiguous to Lakes Eric and Ontario, and also on the southern portion of Lake Huron, the amount of rain was exceedingly small, while in more northern localities rain fell frequently and heavily, and in some places the total fall for the month was abnormally large. A striking instance in the discrepancy in the rainfalls over different portions of the Province is shown between Wooler, near the Bay of Quinte and Ottawa City: the former place records a total fall for the month of only 0.3 inches, the latter 7.6 inches, and Ottawa Experimental Farm as much as 9.9 inches. The rainfall was also much above average in many portions of the North-west Territories and throughout Quebec and the Maritime Provinces. At Montreal and Yarmouth the average amount was exceeded by 3.6 inches, and at St. John by 4.2 inches.

#### WINDS

In British Columbia the general direction of the wind was on the whole westerly, on fourteen days fresh breezes were experienced and on two occasions there were strong winds. In the North-west Territories and Manitoba no one direction prevailed, there were, however, numerous fresh breezes and on three or four occasions strong winds were recorded. In the Lake Region light to moderate variable winds largely predominated, on several occasions, however, the winds became strong from the westerly direction, and between the 29th and 30th a moderate west to north-west gale was felt in many localities more so, perhaps, in the Georgian Bay Region than elsewhere. In the St. Lawrence Valley and the Gulf the winds were westerly on fourteen days and generally variable on others, there were eight days of fresh breezes, five of strong breezes and on one occasion a moderate gale was locally recorded. In the Maritime Provinces the direction was largely westerly, on twelve days the winds were fresh and on two strong.

#### BRIGHT SUNSHINE.

Bright sunshine was above average in all portions of Canada where sunshine observations are taken except at Fredericton, N.B., where it was a little below. It is also probable that the average amount of sunshine was not maintained in the more northern portions of Ontario. Toronto registered the largest amount, 68 per cent of the possible Victoria 67 per cent, Battleford 66 per cent, Winnipeg 64 per cent.

	1 Zo, of Fogs.	000 d 0 0 0000 ft 000 0 000 ft _0 000 0 000m000m0000
	is charmff to a	HAS THE LOSS OF HIS BOSS OF THE BOSS OF GRANTHER GROUPS OF THE BOSS OF THE BOS
•	Zeleafird to .o.Z., Seroth Autoras,	448 9 6 4 6686 65 986 5 968 58 <b>5</b> 558 8_24\$2### 4866_
	in month. Payswith 01 of	්යමත් ව දුරව වන වන වන විසියව වි පුහුව වි. 1832 - 1821 කටය මු ඉඩමුල්ලිලිම මියියියි. - පතිර ද ව වර්ගයට 14 වියේ දෙවියියියි වියේ වියේ කටය මින දෙවියිම්මියියි කටගත්ව
Low	Hat restract	
PITA	hifference from Average.	
PRECIPITATION.	Amount.	
WIND	-ib lare offed most noiteer	85 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
E .	Asjocity.	ee   _
DCITY	Figurest day's	
VECO	Mean miles and req	
	Total number	문장품·기 및 의 : : : · · · · · · · · · · · · · · · ·
	6.	[1] 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
PROM	N. W.	PP   P   P   P   P   P   P   P   P
	.77	G A A A A A A A A A A A A A A A A A A A
Wind	s. w.	8-8 8-5 7 7 7 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
N OF	.8	გოგ ო ო т : შ :
DIRECTION	S. E.	
DIRK	.H.	က်ခ်ခ ခ ဂ က က ည်း မြန်မာ ကြောင်းမှာ ကို မြန်မာ ကို
	N. E.	g° 0 0 m m 10 1 m 10 m 10 m 10 m 10 m 10
	.N	ಲ್ಲಿ ಕ್ರಾಂಡ್ ಕ್ರಾಂಡ ಕ್ರಾಂಡ ಕ್ರಾಂಡ್ ಕ್ರಾಂಡ
- aulm	No. of days con	103 / 12 M M
	Mean amount of	ව සිට විශ්ලා සිට වෙන සිට වෙන සිට වෙන සිට
	Mean relative	::::::::::::::::::::::::::::::::::::::
	Newn temperari	
-	- aguest	200   2   2   1   10   10   2   10   2   2   2   2   2   2   2   2   2
	Date.	
	l.owest.	45 2 4 5 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
RE.		404 to 10 to 10 10 10 10 10 10 10 10 10 10 10 10 10
Гкирккато	. Date.	
KMPF	Years observe.	202 7 7 8 8557 78 804 8 775 79 26 71 11 1 22022232728 8
-	troin average.	2020 20 X 1 0 200 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	- aonoralid	
	Mean.	
-	- Kange.	758656 S
H.	Lowest.	. 기구 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 :
PRESSURE.	Highest.	-588 5 18 18 5 5 5 5 5 5 5 5 5 5 5 5 5 5
PRI		20,000 to 2
-	Mean reduced.	୍ରତୀ ମ ଓ ଓ ଓ ମ ଓ ଓ ଓ ଓ ଅନୁସାର ଅନ୍ୟ ଓ ଓ ଓ ଓ ଅନୁସାର ଅନ୍ୟ ଓ ଓ ଓ ଓ ଅନୁସାର ଅନ୍ୟ ଓ ଓ ଅନୁସାର ଅନ୍ୟ ଓ ଓ ଅନୁସାର ଅନ୍ୟ ଓ ଅନୁସାର ଅନ୍ୟ ଓ ଓ ଅନୁସାର ଅନ୍ୟ ଅନୁସାର ଅନ୍ୟ ଓ ଅନୁସାର ଅନୁ ଅନୁସାର ଅନୁ ଅନୁସାର ଅନୁ ଅନୁସାର ଅନୁ ଅନୁସାର ଅନୁ ଅନୁସାର ଅନୁ ଅନୁସାର ଅନୁ ଅନୁସାର
E-18	Eli vation above Level, in feet.	4 18 18 18 18 18 18 18 18 18 18 18 18 18
	Longitude W.	- 29529597556225574652597475952579557656576525795 395395745555577555239557855395585858585855855
	: .X abinited	一种现代工作的复数形式工作的工具模型的技术的复数形式 医克克克氏征 医克克克氏征 电电极线线 化电力 化二甲烷 电电压 化双烷基苯甲烷基
		HRA.:
	z ,	UMMIA:
	110	Here is a second of the second
	STATION	THEM I COLUMBA.  NAME OF THE STATE OF THE ST
	7.	Particular Collishing Medical Co
H		E CONTRACTOR DE LA CONT

	0:0,0000 00000	; came accentones constructuents de en
2000 00 000000000000000000000000000000	Talan association of the second control of t	#800 HG444HX00 1440H444 14HH 5H 64 #800 00000000 11000000000000000000000000
88888 88 988825825 488888 88 688825825	#== :8445	한용보여 청보조보보고로등은 당소소로등등인소한하다면 다른 보고 당한으로 공합합합으로 보고 등일만으로 중합소소로 등 등 없었
4888 : 8 - 18 : 8888 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	NSB -51442 - 4146624 -	
Joor - 0 - 00 - 043 54		25 26 20 20 20 20 20 20 20 20 20 20 20 20 20
- Fig: 17 97 : 72		- : -1,1,1,6 : 1,2,5,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,
282 K : 22 24882288		6894 987758855 3884256855855 92 85 384-1-00004040000460555555 92 85
, in the second		1
	23 - 1 24"	- 10 10 10 10 19만큼 10 10 10 10 10 10 10 목록 15 10 10 10 10 10 10 10 10 10 10 10 10 10
	###	스
		- 11:11:1 <del>19</del> 78   Flate   HB B HB   HB   HB   HB   HB   HB   H
8 188 : R : 1 - ERR : 1	원생 시 명 등명 기원	[ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [
	He   F   Th   90   H	: APRT 등을 지하는 다른 기가 : 스타트 (PRE TERMINE)
9:00:12:1:1072:		- Filmes (단물문로 Set Virill) [독특부 [구부왕조영의 [Fu]] 원 F
10 Km 11 11 12 12 13		- [[FF=== 隋육홍도==== : [::::===== :====== : [영 / H]]
4 x 3   m		그 [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [
2 F2 : L2 : : : : : : : : : : : : : : : : :		
2 20 3 500		20 4 a le agrante de la mande de la
© ; 78 ; n		10000 PERROPO :::   TOT   4-09200   A   T
0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	T477   19   67   187   1   2   1   1	[ [유리()] [독급교육학하는 기 [ [ ] [ 라마티() 라마함() 이 [ [ 라마티()
To   x 2     2	102 x 17x 100 x 1 x 1.	그는 어제주의 (병음4일이어어어 한 한 한 한 부부제품등이 한 분들은 한 분들은
: ! : : : : : : : : : : : : : : : : : :		iii ii. <del>Tash</del> iiiliiiiii <mark>nh Fian i Fii</mark> ii
	44   M-1+1   M	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
\$5-400 04 (CD\$641-3-0)	efo, xemx ===cen	19
<u>់សិតអេក្ស                                    </u>	ត្រូវត្រូវ ត្រូវក្សា ខេត្តក្នុង [ គ្រាត់ស្ត្រីស្ត្រី គ្រាត់ក្នុង [	######################################
- 4848- 88 .88 488-4 - 500000 00 1000000000000000000000000000	84428884 = 468888 :	: ಇಟ್ಟರು :{ಭರವರದಪಡುತ್ತು ಪಡಿಕಾರಕ್ಷಿತ್ರದಲ್ಲಿ ಅರ್ಥ ತಮ ಮುಖ್ಯಂತ್ರ : ಅಂತ್ರವಾಗಿ ಕಾರ್ಯವಾಗಿ ಕಾರ್ಯವಾಗಿ ಪ್ರತಿ ತಮ
XXXIII FX XXXXIIIXX	สถาทิสหิลษากอกสาร .	- 8879 (คือคิช5ฮอฮิล (รอฮิลิลิลิลิลิลิลิลิลิลิ
\$8.555 38 56.555555 200000 00 00	NASTERNE COCCE.	## 66 ################################
5.46.25. 95 65 5.46.25. 95 65	SSEEDER SERVE	그는 이의 유호명화점으로부터 기요그는 열점하는 동모호명심함 보기 점점
·= :=-	Somerene Hoose	
- 88888 37 8288288 80002	28898888 888888	್ಷ ನಿರಾಣಕ್ಕೆ ಒಳಲು ಅಣಾಧಾಗಿ ಅವರಿ ಅವರಿ ಅವರಿ ಅವರಿ ಕೆಸ್ಟ್ ಕೆಸ್ಟ್ ಕೆಸ್ಟ್ ಕೆಸ್ಟ್ ಕೆಸ್ಟ್ ಕೆಸ್ಟ್ ಕೆಸ್ಟ್ ಕೆಸ್ಟ್
# ! : ! : : : : : : : : : : : : : : : :	844 :	8284 (Resease 196 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	- 88년 : 1 : 2 : 2 : 2 : 2 : 2 : 2 : 2 : 2 : 2	2 [22]
<u> </u>	saa ijiii baa ii ii	- Programme and the company of the second co
	- 新名名 : 1 : 1 : 1 : 87 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 :	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
g : : : : : : : : : : : : : : : : : : :	5.2	- : : : : : : 유통령통 : 남 : : : : : : : : : : : : : : : : :
	555 25 556 555 1 2	1   1   1   1   1   1   1   1   1   1
- RMM4-33-2425-284 (88	41-8111-188123-1-1883	
。 <u>asaasseeeesee</u>	SEEFEEREREES SEE	49997789997777799999977779997777
. 8885888888888888888888888888888888888		Fracestated
N. W. Terrenters Con   Indian   Red   Construction   Construc	Minucless, and Minucless, and Minucless, and Minucless, ask, Minucless, ask, Minucless, ask, Minucless, and Min	
5 5	9	
FOREI a Mr. i	Prairie de la constante de la	
ERRY 1 He od to de	Personal Per	Manager of the control of the contro
M. T. and and an adding a many and a many	Nations, Minucles, Minucles, Minucles, Minucles, Minucles, Minucles, For Colorate F	ONTAIND: Surface Surfa
THE PROPERTY OF THE PROPERTY O	Zu≽žēggagagagēge	ESERTAR AND

STATIONS IN THE DOMINION OF CANADA, JULY, 1899. ŢŢ PRESSURE, TEMPERATURE, WIND AND PRECIPITATION

= :2 Social Thurst. storms = 5 \_\_\_\_ serota Autoras No. of Fair days = × = 33 = 33 элонг то 10' илги гув (I == 7564366 2256988 777777 1 8 1 1 98 888 4<u>=</u>1=3 Hal issivest lifference, from Average, :== = = 77 :33 :33 ARCENE E 'aunomy 21 N E VELOCITY OF WIND N8 8 -ib bare stad mort mortest 7.17 ĸ s'yab isədaiH per hour. Total number stund to · Stations not furnished with Registering Thermometers :- 8 DIRECTION OF WIND FROM 'W. W. ٠,٨١ W. S. S S'E Е. X'E'N Zu. of day completely choudeds. յո դառուսաց առելի Միսու Mean relative Mean temperature of Dewpoint. эвина Ацир инацу æ ē -9184 Barometer not reduced to Sea Level 0 0 3 2 TRMPERATURE. 200 x -1217650 + 0.517740315-850 158-850 012-850 9000 7979 E28E 1211950 98575577 78575577 78111913 77 95u9refiel . [ ì пиэВ 58 0.87 29 87 10 20 20 61 0 59 はこにお 1894001 . PRESSURE 8 Ξ 3.8 29 88 30 28 55 Mean reduced Clevation above Sea Level, in feet.  $\Gamma_{\rm outliffde} M^*$ Latitude X. 72 ದೇಕದನೆನಿವರವರ್ಷ Reality Control of the Control of the Control of Contro Montreal
Richmond
Dierge
Green
Green
Green
Green
Father Point
Green
Green Azinount
Norlicon
Bamoron
Port Hope
Kimmunt
Cocklorn Elrud
Cocklorn Elrud
Dallouste Mils Brantford
- De 'vw-ville
- Onestray
Stony Creek
Toronto
Well nd \*Cottam Brantford arth Sister Rock... thousing Mills STATION mt erf. ....

----

. . . . . . .

I No. of Fogs.

			N.)
1-010	1-9-41-	100mm -0- 0- 1111 -0	÷
.0001 01	600: 6000:	20000 - 0- 0- 2-02 000 00	
_ 왕조종 /	2020,200	요소화요화 하루테 - 요요	22 22 25 2
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	2427.2Es -	의원들으로 모든 말으	A 52 42 4
# 1828 H 18	8,545,47 = -	등록함성은 당한당 114은 당근으로 그리고 15도	4 A A A A A A A A A A A A A A A A A A A
10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7525555 75255555	현생은 학화 기원은 기사 기계	2 22 22 1 1 2
- 15 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 111
£ 1978   18	84444444444444444444444444444444444444	58485 1288 128 198485 1388 128	5 25 25 E
20 N F T S W	8	8 5 6 6 6 5 1	± 1
± 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 m 2 = ± 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	### E ## >	
= = = = = = = = = = = = = = = = = = =		78 e% e	
19 <u>53 : 18</u> 5	#4등주름: HE	등등학교의 기계의 등 등 등	E : : : 88 : : : 8
<u> </u>	<u></u>	SHESS (*** (8))	- 舞山 E = 1111 第
:54-::	PR458::::	Agrika (mer ja ) i	gili ili s
=========	BERER: F	음의왕의 [크스트 ]한 <u>[</u>	Bill Anii m
: - : : : : : : : : : : : : : : : : : :			
1 1 1	워드트레스 : : 프	원통구병의 (프로의·중 ) .	
22. Fr.	working : :=		S : !! 87 !!! 1
=== :==	=- <u>₹</u> "∃ : . ; <sup>5</sup>	5 = 1 = 5 = 1	- F   F   F   F   F   F   F   F   F   F
257 ::- 2	F=455	a 21 a 31 c inventor 11 -	F
1-1-21	E-112/15	0 X 0 0 - 0 0 - 15 1 1	
:- <u>2</u> 5 : :=**	=======================================	5==8x  == 1  =  =	211222 =
	1-11-01-0	15宣世615	
- i j		International Control of Control	
- :: ':::			
	7 11 8 11 1		
15:11	841 - 8850 841 - 8858	**************************************	2 11 62 11 6
855 27		5855   847   62	
, 8 <del>, 2</del>	226822222 226822222	95755 545 65 98658 747 88	0 00 00 11 7 6 32 22 1 6
[8=a : [8=	0-=68E-40	- 함부만큼의 기반을 1.14H	그 가는 원들 : : . 유
- 5-5 - 121-			v (42 22 1 -
	######################################	0000-7 1000 100 78977 1787 199 88888 721 17	5 87 58 11 5 5 87 58 11 5
· == = = = = :	225453	99924 H21 144 14834 - 148 H21	E in selli
	11 1		1 1 1 1 1 1 1
· 388 51	558885559	28225 (483   63 28225   683   63	2 6 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
<b>#</b>	848 8 946 6 838 8	728786	§ § <u></u> §
	444	5348 :	-51: <u>2:3:8</u>
	តតិតិ តិ 💠	8688 :	8 1 1 8 1 1 1 8
d i i i i i i i	\$55 & 888 &		51: 8 8 : 8 : 8
g ! ! ! ! ! ! ! !	영화의 설 :	1999 H	의 : [ 뭐 : [ : 2
	555 (8) 554888 (1)	- 3333 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- A : : : 8 : : : 8 : : : : 8 : : : : : :
· 448882423	868688621 8884-897	88277=2575555555555555555555555555555555	- 2000 - 21000 - 2000 -
(QUERRC—(Continued)	Performance 45 of 66 Performance 45 of 66 Performance 45 of 67 Performance 11 of 67 Performance 12 of 67 Performance 16 of 67 Performance 16 of 67 Performance 16 of 67 Performance 16 of 67 Performance 17 of 67 Performan	Market   M	P. Estavor   E. H. G. Comeditore   E. Co
2 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
<u>8</u> 4 ≥ 4			
्ट्रे <b>%</b> ल ल ल	Marie		
State of the state			
Grandstone Grindstone Anticosti, W. Pt. Anticosti, S. W. Pt. Abtifiti.  Anticosti, E. Pt. Bird Rocks. Robersal Perek	New Harnswick: Frederickin Grand Mann  Official Lepremax  St. John  Uniform  St. John  St. John  Marten  St. Stripen	Sydney Sydney Furner Fu	R. I., I. Stander, Chendelderen Chendelderen Ceregoderen Semmersde Huntforn Kandelderen Semmersde Chendelderen Semmersde Chendelderen Semmersde Chendelderen Semmersde Chendelderen Semmersderen Semmers
Şu<44 <b>₹</b> ≅≅₹	8 <u>855</u> 85.02		CONTENTO STEE

### PRECIPITATION AT STATIONS REPORTING RAIN, WEATHER, &c., DURING JULY, 1899.

		1	Rainual.	l		
STATIONS.	Amount in inches.	Days 01 or Over.	No. of Fair Days.	Heaviest Fall in Month.	Date.	Thunder or Lightning, &c.
British Columba Cumberland. Langley. Beaver Creek Nanaimo Royal Oak W. Terratrories	1 83 0 92 1 20 0 73 0 10	3 5 4 3 1	28 26 27 28 20	0 69 0 25 0 69 0 73 0 10	21 3 23 22 3	
Cumberland. Langley Beaver Creek Namaino Royal Unk N. W. Tekutrones Estevan Didsbury Coutts Saftegats Innisfal Lethoridge West Feaver Hills Rouleuw Manyroux	2 76 2 29 3 44 0 22 6 53 2 53 3 72 2 28	5 10 11 6 8 6 13 8	26 21 20 25 23 25 18 23	2 00 0 45 1 40 0 50 2 58 1 35 1 00 0 48	25 4 3 7 30 22 6 5	8, 20, 10, 13, 18, 22, 26,
Ulswater, Greenwood Oakbank Morden Turtle Mountain Rapid City Clear Spring Gretna Pembua Crossing	3·28 3·55 2·41 2·10 2·31 1·76 2·23 3·96 4·34	9 9 12 3 5 5 10 9	20 20 17 26 26 26 27 27	2 07 1 26 0 43 1 50 2 10 0 77 0 57 1 25 1 74	5 31 11 6 5 31 6 6	9, 14, 18, 27, 3, 5, 9, 1, 2, 3, 11, 19, 21, 23, 27, 31, 21, 22, 31, 2, 3, 5, 8, 9, 11, 12, 14, 15, 16, 19
Selkirk Elgm Oak Lake Shoal Lake Cartwright(2) Hartney Lelmont Cartwright (1) Normay	2 14 1 19 1 07 0 30 2 18 1 61 3 61 2 87 3 16	9 12 3 1 4 7 9 10 12 5	22 17 28 39 23 24 22 21 19 26	0 80 0 46 0 43 0 30 1 10 0 78 2 34 1 14 1 81 0 72	31 6 31 31 22 6 22 3 12 22	2, 3, 5, 8, 9, 11, 12, 14, 15, 16, 19 21, 22, 25, 26, 27, 9, 11, 14, 71, 18, 23, 31, 2, 3, 8, 9, 14, 15, 22, 1, 2, 14, 15, 18, 20, 22, 25, 26, 2, 3, 5, 11, 15, 20, 22, 31, 1, 3, 12, 15, 19, 21, 23, 27, 28, 29,
Providence Pay Penetanguishene Loon's Head N. Williamsburg Huntsville Thompson Sunshine Ursa Port Burwell Sparrow Lake Glen Elin Mostague Croydon Oliver's Ferry Parma Wyoning Lausdowne Arden Jermyn Wooler Dutton Scarboro Wafford Wilton Grove Go berich Mulband Aunora Lynesdoch Emsilde Georgetown Emissione Corgetown Emissione Emissione Corgetown Emissione Corgetown Emissione Emissione Corgetown Emissione Emissione Corgetown	62 8 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 1 4 4 6 5 6 1 5 7 8 6 6 6 5 7 8 6 6 6 5 7 8 6 6 6 6 6 7 8 6 6 6 6 6 7 8 6 6 6 6	8 12 8 12 10 10 3 12 12 5 6 6 6 6 10 10 10 12 12 15 5 8 8 4 6 6 7 12 4 4 4 6 6 6 6 6 11 8 6 6 12 12 15 5 9 8 3 3 8 7 7 6 8 6 7 7 7	19 19 19 19 19 19 19 19 19 19 19 19 19 1	0 35 1 32 0 1 32 1 32 1 32 1 32 1 32 1 32 1	неределя желе такана такана така така така така така	17, 25, 26, 7, 5, 8, 10, 11, 3, 11, 21, 3, 1, 5, 8, 1, 11, 21, 3, 1, 5, 8, 1, 20, 5, 21, 3, 7, 11, 8, 9, 17, 21, 29, 5, 7, 11, 22, 34, 7, 8, 15, 21, 25, 27, 29, 7, 11, 27, 30, 3, 4, 8, 27, 29, 3, 4, 5, 7, 21, 26, 3, 7, 8, 4, 5, 7, 21, 26, 3, 4, 5, 7, 10, 11, 26, 27, 29, 3, 1, 8, 7, 29, 5, 7, 11, 3, 1, 15, 4, 5, 7, 10, 11, 26, 27, 29, 3, 1, 8, 7, 29, 5, 7, 11, 3, 1, 15, 4, 5, 7, 11, 3, 1, 15, 4, 5, 7, 11, 3, 1, 15, 4, 5, 7, 11, 3, 1, 15, 4, 5, 7, 11, 3, 1, 15, 4, 5, 7, 11, 3, 1, 15, 4, 5, 7, 11, 3, 1, 15, 4, 5, 7, 11, 3, 1, 15, 4, 15, 5, 7, 11, 3, 1, 15, 4, 15, 5, 7, 10, 11, 20, 27, 29, 3, 1, 8, 7, 29, 4, 5, 7, 11, 3, 1, 15, 4, 15,
Point Escummac. Nova Scotia Port Morien P. E. Island -	6 77   5 02	18 11	13 20	1 23 1 08	9 18	4, 5, 18,
Mount Stewart Murray River.	4 52 5 15	9 13	22 18	1 07 1 35	7 12	31. 14.

#### Thunderstorms on-

- 1. Stony Mountain, Kne. all, Savanne, Clear Spring, Belmont, Norquay, N. S. ster Rock, Moese Factory,
- 2. Percé, Mosquito Cree Calgary, Nicola Lake, Lucknow, Clear Spring Pembina Crossing, Elgin, Belmont, Swift Current, Med. Lee Hat, Emer on, Conikup.
- 3. Whiteside, Stratford, Durham, Owen Sound, Portage la Prairie, Nicol. Like, Beatrice, Jermyn, Hamilton, Kinm unt, Meatoca, Erasmus, Agincourt, Bancroft, Stony Creek, Point Clark, Birnam, Sunshine, Sparrow Lake, Wyoming, Madand, Aurora, Georgetown, Orangeville, Wiarton, Turbe Mountain, Clear Spring, Elgin, Norquay, Battleford, Meancine Hat, Parry Sound, Toronto, Emerson, Yaurow, Barrie, Moose Factory.
- 4. Whiteside, Crane Lake, London, Lindsay, Coldwater, Durham, Mosquito Creek, Owen Sound, Brome, Beatrice, Meaford, Erasmus, Beneroft, Point Escaminae, Glen Elm, Jermyn, Midland, Emsdale, Orangeville, Wiarton, Bermuda, Swift Carrect, Medicine Hat, Barrie, St. John.
- 5. Montreal, Stratford, Codwater, Durhum, Truro, Fredericton, Pictou, Moncton, Calgary, Kneehill, Beatrice, Clontarf, St. Anne, M. nford, Bancroft, Brantford, Sprucedale, Welland, Lucknow, N. Williamsburg, Sparrow Lake, Montague, Arcen, Dutton, Midland, Emsdale, Uxbridge, Sydney, Bermuda, Ottawa, Swift Current, Port Stanley, Charlestown, Barrie.
- Rosebank, Stony Mountain, Fredericton, Port Hastings, Red Deer, Brome, Point Clark, Sydney, St. Johns, Ottawa, Kingston, Quebic.
- 7. Stratford, Lindsay, Guelph, Durham, Stony Mountain, Woodstock, Calgory, Red Deer, Gritlin Lake, Clontarf, Uplands, Gosfield S., Ridgetown, Bancroft, Point Clark, Sprucedale, Providence Bay, Lion's Head, Wyoning, Dutton, Searboro, Wilton Grove, Midland, Aurora, Emsdale, Georgetown, Dealtown, Uxbridge, Bantl, Medicine Hat, Parry Sound, Toronto, N. Sister Rock, Barrie.
- London, Macleod, Hinview, Kneehill, Beatrice, Clontorf, Otonabee, Agin court, Scarboro, Stouffville,
   Peterboro, Bancroft, Point Clork, Sparrow Lake, Lansdowne, Jermyn, Orangeville, Pembina Crossing, Eigin,
   Didsbury, Prince Albert, Ottawa, Calgary, Medicine Hat, Port Stanley, Kingston, Yarmouth, Toronto, Barrie.
- 9. Rosebank, Crane Lake, Stony Mountain, Portage la Prairie, Pipestone, Kneehill, Duck Lake, Red Deer, Stonffville, Lansdowne, Arden, Cakbank, Turtle Mountain, Selkirk, Elgin, Battleford, Medicine Hat, Winnipeg, Kingston, Yarmouth.
- 10. Crane Lake, Moose Jaw, Gatesgarth, Duck Lake, Bullion, Point Clark, W. Beaver Hills, Bermuda, Swift Current, Medicine Hat, Saugeen, Quebec, N. Sister Rock.
- H. Rosebank, London, Lindsay, Purham. Stony Mountain, Barnardo, Portage la Prairie, Treherne, Hillview, Clontarf, Gostield S. Kinmount, Meaford, Otonabee, Ridgetown, Agincourt, Bancroft, Sarnia, Brantford, Point Clark, Port Pover, Lucknow, N. Williamsburg, Sunshine, Wyoming, Dutton, Wilton Grove, Uxbridge, Clear Spring, Pembina Crossing, Selkick, Battleford, Prince Albert, Switt Current, Minnedosa, Port Stanley, Toronto, Oonikup.
- Rosebank, Crane Lake. Deseronto, Stony Mountain, Brome, Welland, Norquay, Ottawa, Quebec,
   Father Point Oonikup.
- 13. Wolfville, Percé, Truro, Fredericton, Calgary, Brome, Savanne, Prince Albert, Medicine Hat, Quebec, Grand Manan.
- 14. Mosquito Creek, Truro, Summerside, Channel, Pictou, Hillview, Brone, Tobacco Piains, Murray River, Oakbank, Pembina Crossing, Selkirk, Elgin, Belmont, Swift Current, Medicine Hat, Minnedosa, Yarrow,
- 15. Aweme, Stony Mountain, Pipestone, Brandon, Otonabee, Ridgetown, Scarboro, Wiarton, Pembina Crossing, Elgin, Belmont, Norquay, Quebec, Moose Factory.
  - 46. London, Barnardo, Calgary, Griffin Lake, Clontarf, Otonabee, Peterboro, Calgary, Emerson.
- 17. Whiteside, Stratford, Lindsay, Gravenhurst, Beatrice, Clontarf, St. Anne, Gosfield S., Bancroft, Brantford, Paris, Provinence Bay, Lansdowne, Arden, Selkirk, Parry Sound, Quebec.
- 18. Moncton, Hillview, Gatesgarth, Duck Lake, Red Deer, Cannington Manor, Brandon, Clontart, Uplands, Brantford, Point Escaminac, Oakbank, Selkirk, W. Beaver Hills, Prince Albert, Emerson, St. John.
- 19. Stony Mountain, Hillview, Red Deer, Savanne, Clear Spring, Pembina Crossing, Norquay, Barker, ville, Battleford, Prince Albert, Banff, Qu'Appelle, Minnedosa, Winnipeg, Quebec.
- Rosebank, Stratford, Durham, Barnardo, Haliburton, Saskatoon, Pipestone, Knechill, Red. Deer,
   Cannington Manor, Brandon, Guilin Lake, Clontarf, Port. Hope, Bancroft, Point Clark, Lucknow, Glen Elm-Belmont, Didsbury, Kamloops, Banff, Port Arthur, White River, N. Sister Rock.
- 21. Montreal, Rosebank, Coane Lake, Lindsay, Durbam, Truro, Fredericton, Point Lepreaux, St. Stephen, Moncton, Sussex, Red Deer, Brome, Richmond, Nelson, Beatrice, St. Anne, Arden, Agincourt, Bancroft Welland, Sunshine, Montague, Lansdowne, Scarboro, Emsdale, Gretna, Norquay, Bermuda, Battleford, Swifts Current, Medicine Hat, Qu Appelle, Winnipeg, Yarmouth, Grand Manan, Emerson, Oonikup, Bârrie, St. John

- 22. Crane Lake, Barnardo, Truro, Portage la Prairie, Treherne, Dutton, Gretna, Pembina Crossing, Elgin, Belmont, W. Benver Hills, St. Johns, Swift Current, Medicine Hat, Qu'Appelle, Minnedosa, Port Arthur, Yarmouth, Grand Manan, Sable Island, Yarrow, St. John.
- 23. Aweme, Stony Mountain, Mosquito Cteek, Chilliwack, Calgary, Nicola Lake, Savanne, Bancroft, Clear Spring, Selkirk, Norquay, Battleford, Medicine Hat, Minnedosa, Winnipeg, Emerson, Oonikup.
- Crane Lake, Macleod, Mosquito Creek, N. Nicomen, Hazeimere, Nelson, Tobacco Plains, Dutton, Langley, Abitibi, Battleford, Port Arthur, White River, N. Sister Rock, Yarrow, Moose Factory.
- 25. London, Lindsay, Coldwater, Durham, Woodstock, Moose Jaw, Agincourt, Paris, Welland, Providence Bay, Scarboro, Abitibi, Battleford, Medicine Hat, Toronto, N. Sister Rock, Barrie.
- 26. Rosebank, Owen Sound, Treherne, Red Deer, Meaford, Erasmus, Brantford, Belmont, Stony Creek, Sprucedale, Providence Bay, Midland, Emsdale, Pembina Crossing, Port Arthur, Parry Sound, N. Sister Rock, Oonikun.
- 27. Montreal, Whiteside, Stratford, Lindsay, Fredericton, St. Stephen, Portage la Prairie, Treherne, Brome, N. Nicomen, Hazelmere, Bancroft, Arden, Scarboro, Georgetown, Oakland, Clear Spring, Norquay Battleford, Winnipeg, Port Arthur, Quebec, Toronto.
  - 28. Portage la Prairie, Norquay, Sydney.
- 29. Brome, Clontarf, St. Anns, Gostield S., Ridgetown, Brantford, Paris, Lansdowne, Wooler, Scarboro, Dealtown, Norquay, Victoria, St. Johns, Port Stanley, Moose Factory.
  - 30. Macleod, Moncton, Calgary, Kneehill, Griffin Lake, Tobacco Plains, Arden, Banff, Yarrow.
- 31. Rosebank, Barnardo Pictou, Portage la Prairie, Treherne, Gatesgarth, Nelson, Banff, Mount Stewart, Clear Spring, Selkirk, Minnedosa, Winnipeg, Yarrow.

#### Aurora recorded -

Where the class of aurora is noted by the observer, it is given, (I) being the brightest, (IV) the feeblest in brilliancy.

- 1. Aweme, H; Georgetown, IV; Treherne, Cannington Manor, IV; Bancroft, II; Meaford, IV; Savanne.
- 2. Pembina Crossing, IV; Red Deer, H.
- 3, Truro, H; Sydney, I.
- 4. Hillview, II; Pembina Crossing, II; Minnedosa, II.
- 6. Georgetown, IV
- 7. Montreal, III: Pembina Crossing, II; Channel Island, IV; Meaford, IV; Savanne, Minnedosa, I.
- 8. Aweme, II.
- 9. Pembina Crossing, III; Savanne.
- 10. Georgetown, IV; Cape Magdalen, Red Deer, III; Savanne, Kingston, III; Quebec, IV.
- 15. Hillview, H : Banff, IV.
- 16. Hillview, I1; Pembina Crossing, III; Channel Island, IV.
- 25. Pembina Crossing, II; Savanne.
- 26. Moose Jaw, Swift Current, IV.

## PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF JULY, 1809.

							нс	URS	ENDI	NG						
	.: A. M.	6 A•M•		ч А.М.	А.М.	]0 4. M.	11 a.u.	NOON.	I P.M.	2 Р. М.	3	4 P.M.	5 P.M.	6, P+M+	7. Y. Y.	Р. Л.
Victoria	0.(0)	0.26	0.60	0103	0.64	0.73	0:54	0 -1	0.90	0.89	11 55	0.50	11.54	0.52	0.69	17.116
KUPER ISLAND																
Aoassiz		0.03	0.18	0.51	0.62	$0^{n+2}$	0.65	0.67	+72	0.67	0.68	0.67	0.64	0.57	0.22	0.00
BATTLEFORD	0.59	0.65	4) 15%	0.70	0.73	0.73	0175	0.73	0.72	0.71	0.75	0.75	0.66	0.56	1) 4()	0.11
INDIAN HEAD		0.02	0.43	0.64	0.71	0.72	0.77	0.77	0.77	0.75	0.79	0.80	0.71	0.74	0.64	0.22
Brandon																
Winnipeg	0.22	0.62	0.75	0.74	0.72	0.74	0.74	0.75	0180	0.76	0.73	0.63	0.63	0.61	0158	0.14
DURHAM	0.00	0.02	0.28	0.41	0:49	0.47	0.58	0.63	0.71	0.65	0.70	0.66	0.69	0.65	0.37	0.08
WOODSTOCK	0.00	0.11	0.62	9.73	0.70	0.80	0.82	0.51	0.77	0.73	0.75	0.73	0.72	0.69	0.60	0.10
TORONTO.	0.00	0.25	0.70	0.79	0.75	0.72	0.52	0.81	0.54	0.54	0 ×I	0.79	0.79	0.75	0.5	0.04
LINDSAY	S	0.30	0.42	0.67	0.77	0.75	0.73	0.72	0.74	0.72	0.75	0.74	0.64	0.48	0.37	0.22
Barrie	0.02	0.31	0.61	0.65	0.69	0.70	0.70	0.74	0.71	0.50	0.76	0.69	0.71	0.68	0.34	0.00
Kingston	s	0.33	0.76	0.79	0.75	0.75	9.76	0.75	0:76	0.76	0.75	0.70	0.64	0.61	0.40	S
Ottawa	0.31	0.59	0.69	0.74	0.74	0.74	0.75	0.77	0.77	0.74	0.60	0.51	0.54	0.44	0.37	0.10
Montreal	S	0.34	0.23	0.58	0.72	0.78	0.70	0.70	0.23	0.74	0.77	0.67	0.66	0.42	0.05	0.00
FREDERICTON	0 16	0.26	0.31	0.43	0.45	0.50	0:56	0.62	0.56	0.58	0.50	0.52	0.48	0.44	0.10	0.00

	VICTORIA.	KUPER ISLAND.	AGANS1Z.	BATTIRFORD.	INDIAN HRAD.	BRANDON.	WINNIPEG.	Бовнам.	Woodstock.	Токонто.	Lindsay.	BARRIB.	KINGSTON.	Urtawa.	MONTERAL.	FREDKIGGON.
MRAN PROPORTION FOR MONTH (Constant sunshine being 1.)	0.67		0.48	0 66	0.60		0.64	0:47	0.64	0 68	0.90	0 60	0.63	0:58	0.63	0.43
DIFFERENCE FROM AVERAGE	+0.14		+0.02	+0 09	$\pm 0.01$		+0 06	_	+0.06	+0.08	+0.03	-0 05	-0 06	_	+ 0.04	<b>-0 08</b>
MAXIMUM DAILY AMOUNT	0.88		0.82	0.95	0.865		0:92	0.88	0.93	0-91	0 99	0.90	0:90	0.88	0:58	0193
Date	11 13		25	17	I		30	30	24	30	31	28	31	31	24	28
No. of Days Completely Clouded	1		7	0	0		0	5	1	0	0	0	0	2	3	4

#### FORECASTS FOR JULY, 1899.

The forecasts issued by this office at 11 p.m. each night are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions is ucd during the month was 929. These were divided as follows:—

And the second s					
	No.		VERI		
DISTRICT.	Issued.	No. Fully	No. Partly	No. Not	Percentage
Manitoba	91	+3+3	25	6	79.7
LAKE SUPERIOR	103	74	19	10	81.1
Lower Lake Region	116	57	17	12	82 3
Georgian Bay	114	SIF	25	9	81.1
Ottawa Valley	103	80	11	12	83 1
UPPER St. LAWRENCE	102	75	19	× .	82 8
LOWER ET. LAWRENCE	97	70	15	12	80.0
GULF	in.	72	22	4	84 7
Maritime Provinces	105	77	23	5	54.3
Тотац	929	67.5	176	78	82 1

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,

Director.

Meteorological Office, Toronto, 26th August, 1899.

## METEOROLOGICAL SERVICE, DOMINION OF CANADA.

## Monthly Tdeather Review.

VOL. XXIII

AUGUST, 1899.

No. 8

#### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

#### REMARKS UPON THE WEATHER.

The weather of August was chiefly remarkable for the heavy rainfall and low temperature westward from Manitoba and the light rainfall and high mean temperature eastward from Lake Illuron to the Atlantic Coast. These abnormal conditions were almost disastrous in some districts, the drought in Ontario doing much damage. Apart from its effect upon vegetation in Ontario and Quebec the weather was fine and enjoyable in Eastern Canada.

In British Columbia the weather was cool, cloudy and wet and altogether exceedingly unpleasant. In some districts thunderstorms were unusually frequent, and in the upper mainland show fell upon several occasions on the mountain sides. Much damage to grain and other crops was caused by the wet weather.

Throughout the greater part of the North-west Territories the weather was much the same as in British Columbia, it being cool, cloudy and unusually wet. In some places the total rainfall was three times the average amount and the temperature was 7.0 below average at several stations. Light frost occurred in a few districts but caused no damage, nevertheless farm crops were backward and damage to grain before ripening by later frost was threatened.

The wet weather of the two last mentioned provinces did not extend to Manitoba the rainfall there being about normal; it was however somewhat cooler than usual and light frosts occurred at a few places. Harvesting of grain occurred on or about the 27th, and the farming community generally were jubilant over the condition of their crops.

In Ontario the weather was unusually fine, warm and dry, and although enjoyable it was almost disastrous to agricultural interests. In some the rainfall was only about one fourth of the average, and at three stations no rain fell during the month. Clear days with scorching sun prevailed in southern districts and vegetation had a blighted appearance. In districts contiguous to Lake Superior the rainfall, on the contrary, was well above average and vegetation was in good condition. Light frosts occurred in some places on or about the 14th.

In the Province of Quebec the weather was of much the same character as that in Ontario, it being fine warm and dry: the drought, however, was not so severe and plant life generally was in better condition. The maximum temperatures though exceeding 90 at two places were generally much lower than in Ontario, whilst the minimum temperatures were about the same.

The weather conditions in New Brunswick did not diverge much from the normal excepting in the rainfall, which was below average, and in the unusually large amount of bright sunshine; the drought however was nowhere very severe and the condition of vegetation in most districts was excellent. At a few places the mean temperature was somewhat below average.

In Nova Scotia there was much fine warm dry weather, and although the rainfall was considerably below average in some places the condition of grain and other crops was exceptionally favourable. No storms of much importance were reported and the only place at which many fogs occurred was Yarmouth.

The weather conditions of Prince Edward Island were much the same as in New Brunswick and were chiefly remarkable for the light-rainfall which was recorded at some places; however the weather altogether did not differ much from the normal, and reports regarding the condition of vegetation were generally favourable. F. F. PAYNE.

#### ATMOSPHERIC PRESSURE.

Pressure was from average to a little above from the Lower Lake Region to Maritime Provinces, and elsewhere throughout Cunada it was below average, especially so from the Rocky Mountains to Manitoba, where the deficiency ranged from '050 inches to '120 inches.

#### HIGH AREAS.

Five areas of high pressure were traced during the month as follows .-

No. I was a shallow high, which appeared over Manitoba on the 5th, and afterwards moved slowly over the Lower Luke Region to the Ottawa Valley, where it dispersed on the 9th. No. 2 was situated as a very shallow high on the British C dumbian Coast on the 11th. It travelled rapidly eastward and reached Manitoba on the evening of the 12th. After leaving Manitoba the area became more important, and between the 13th and 17th it traversed Canada from the Lukes to the Atlantic, attended by very fine weather. No. 3 was situated in the Western States on the 24th, being appearently an offshoot of a high then existing in the North Pacific States. It passed between the 25th and 26th over the Luke Region and the St. Lawrence Valley to the Gulf. No. 4 was situated in Manitoba on the 27th, and then moved with rapidity over Canada to the Maritime Provinces, where it became united on the 28th with No. 3. The system then was centred in the Maritime Provinces until the 31st, the weather, meanwhile, remaining very fine from the Lukes to the Atlantic. No. 5 first appeared on the North Pacific Coast on the 27th. During the night of the 29th, it passed into the North-west Territories. On the following night it was situated in Manitoba, and on the 31st it was centred to the northward of Luke Superior. This area was a companied by local frosts in the Territories and Manitoba.

#### LOW AREAS.

Low pressure almost continuous y covered the Territories, Manitoba and the greater portion of British Columbia, and although this low pressure was doubtless owing to a succession of shallow depressions, the courses of these depressions were so doubtful that they could not be accurately charted. Four lows were traced as follows:—

No. 1 was a shallow depression, which travelled between the 1st and 3rd from the Lake Superior district to the Upper St. Lawrence Valley, attended by general showers over Luke Superior, and scattered thundershowers elsewhere. No. 2. From the 4th until the 8th, comparatively low pressure existed in the Territories and Manitoba, attended by numerons showers and thunderstorms in the former district, and scattered showers in the latter province. On the night of the 8th a more defined depression was situated in Alberta, and this depression passed slowly over the North west, accompanied by frequent rains, and reached Lake Superior on the evening of the 11th. It afterwards moved more quickly far north over the country to the St. Lawrence Valley and the Gulf, giving showers generally, except in the Lower Lake Region, where they were only local. No. 3 was the West India hurricane, which caused such disaster in the West Indies between the 7th and 13th. After striking the Florida coast it moved unusually slowly up the Gulf Stream, and on the 19th apparently broke completely up when off the Hatteras coast. Its influence did not extend to any Canadian ports. No. 4 passed from the North west Territories to the Lake Superior Region between the 19th and 20th, being seemingly augmented for a time by a subsidiary from the Western States. As the depression continued its easterly movement from Lake Superior, it decreased in energy, and after reaching the Upper St. Lawrence Valley on the 22nd, it dispersed. During its presence rain fell generally and heavily everywhere, except in the Lower Lake Region.

#### TEMPERATURE.

Temperature was below average from Vancouver Island to the Qu'Appelle Valley, and above average everywhere else in the Dominion except over Cape Breton and the Island of Anticosti, where it was from average to I below. In British Columbia and the North-west Territories it was very much below average, Kamloops reporting 8 below, and Banff and Calgary 6 below. On the other hand, many places in Ontario report the temperature as much as 5 above average, and in the Province of Quebec, Montreal was 3 above and Quebec City 2 above average.

The Highest and Lowest Temperature in each Province during August, 1899, were:

1 11	,	V .
British Columbia,	90 .0 on 5th at Midway.	29 .0 on 29th at Midway,
41	90 .0 on 6th at Griffin Lake.	
North-west Territories,	90 .0 on 25th at Alameda.	27 .5 on 30th at Duck Lake.
Manitoba,	92 .0 on 25th at Aweme.	28.0 on 31st at Rosebank.
44	92 .0 on 25th at Pipestone.	
Ontario,	101.0 on 20th at Stony Creek.	29 .0 on 31st at Peterborough.
Quebec,	94.0 on 25th at Richmond.	33.0 on 15th at Brome.
New Brunswick,	91 .0 on 19th at St. Stephen.	40 .8 on 11th at Sussex.
Nova Scotia,	86 .3 on 19th at Halifax.	40 .0 on 11th at Sydney.
Prince Edward Island,	86.4 on 3rd at Charlottetown,	47 .7 on 18th at Charlottetown.

#### PRECIPITATION.

The rainfall was above at large from Vancouver Island to the Qu'Appelle Valley and also over the Lake Superior district, and below are rage throughout the large remaining portion of Canada. The excessive precipitation over British Columbia and the North-west Territories, was remarkable and more especially in the Territories where the average amount of precipitation is usually so small. Innisfail reports 12.25 inches, Didsbury, 7.4 inches, Calgary 2), 9.9 inches, Edmonton, 6.4 Kneeh II, 9.7 inches Duck Lake, 7.2 inches, Red Deer, 9.7 inches, Musquito Check, 7.9 inches, Calgary (1) reports 9.4 inches, nearly equal to the total average annual amount for that district. Edmonton reports 6.4 inches, Prince Albert 8.0 inches. It was also remarkable, considering the abnormal rainfall in the North-west Territories, that Manitoba should have had an amount less than the average when that in the Lake Superior district was also allow average. Another remarkable feature in the rainfall distribution during the month was the drought over the Georgian Bay district, the Lower Lake region and the Ottawa Valley. Some few localities owing no doubt, to local thun lerstorms, recorded over two inches of rain, but over the larger portion of these districts solvedly any rain fell, and some places reported none.

#### WINDS

In British Columbia the westerly direction prevailed on seventeen days and the easterly on seven. On sixteen days fresh breezes were experienced and on three days the winds were strong. In the North west Territories no one direction predominated, there was however a considerable wind mileage generally. On thirteen days fresh breezes were recorded and on four occasions strong breezes to gales were experienced. In Manifolar the westerly direction prevailed on eleven days and the easterly on thirteen, the e-were eleven days of fresh breezes and seven days of strong winds. In the Lake Region light to moderate variable winds were prevalent and on only, two occasions was the force of a strong breeze generally attained. In the St. Lawrence Valley the winds were westerly on sixteen days and easterly on six there were fourteen days of fresh breezes, five of strong and on the 14th, the force of a gale was reached in the Gulf. In the Mutitime Provinces the westerly direction predominated but the wind force seldom exceeded that of a moderate breeze, and on no occasion was a strong breeze experienced except very locally.

#### BRIGHT SUNSHINE.

Bright Sunshine was above the average in Ontario, Quebec and the Maritime Provinces and below average from Vancouver Island to Manitoba. The largest amounts registered was at Barrie and Lindsay where it was 65 per cent of the possible and the smallest amount was at Agassiz, B. C. where it was but 22 per cent of the possible

		U I	
708. Parament Parament Paramental	Amount, inflatence that Avorage that Avorage that in Avorage that in month to a few or Avorage and Avorage to a few or Avorage	100   2   100   10   0   0   0   0   0   0   0	### ##################################
3			
=	ib lune atadi mort noiteer		20 20 20 20 20 20 20 20 20 20 20 20 20 2
Ĕ,	Highest day'		818575F 9
VELOCITY	Mean males		
	redunatistoT stand to	- 프로워 등 전 약 · 역 · · · · · · · · · · · · · · · · ·	8.555944
_	ر.		58551755555 5851755555 585175555 58517555 58517555 5851755 5851755 5851755 5851755 5851755 5851755 5851755 5851755 5851755 5851755 585175 5851
FEOM	N. W.		0.05.58H04 :F
Wind	'.Λι		51-x5-30x8::01
4:	s. w.		Edroded o
DIRECTION OF	S. E.	800 H # 10 10 10 11 11 11 11 11 11 11 11 11 11	വസർക്കള്യർല വ
HRE	Э.	4°° (* .* .**	t+∞10 = 0100 0 : 00 :
-	X, E.		0514100144±001-; 00;
	. N.		Estronous som
-apdigos	popuoja Ajaj 7 o og 1512		e E230-wo
Jo.	Mean amount Choud.		
nH or	visulos arold. "Atibiai		8 1 12 12 13
to state	Mean temper Dewpontt.		
	Date, Mean daily range.		88888888888888888 88888888888888888888
	.389W0.1		######################################
. HE	flate.	The state of the s	x → x ⊋ → x <u>x</u> 2 → → → x x x x
TRMPERAT	displanti - Asadanti	1-00 0 00# 011 0 0 1 1 10 0 0 00m 000 #0010 0VW	0000000000000
Темп	Leaus ope and	그 회율회 본 또 [또 프레 우 - 또 ## - 0 - ### - ## - 1 - ##	83825555 8382555 8382555 838255 8382
1	Difference from average	n Xu - G si + p - e - c - y - e reser - de en si fi - en e - e   e   y - e   - e   e   e   e   e   e   e   e	1
	Меап.	488 8 Kr2 8 P 5   88 B 888 P84 R28 8 888	0233488888888888888888888888888888888888
	teging)	#48 4 . 8 . 8 . 9	4887188 F
CBR.	,589W0.1	- (출조 ) (선생님 ) (전 ) (전 ) (조 ) (조 ) (조 ) (조 ) (조 ) (조	500000 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
PRESSURE	Highest.		20 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
, –	Мень геднееф	= <del>37</del>	도조조망당남 <b>형</b> : 8 : : : :
вэ8 эм	Elevation als	7 : 2 : 4 : 5 : 5 : 2 : 2 : 2 : 5 : 5 : 5 : 5 : 5	25222222222222222222222222222222222222
	W obnignod	. 89a-5595-5595-2250-2324-2325-2325-2325-2325-2325-2325-2325	555555885558858 565555585588588
-	Latitude X.	경약롭역병원의 연료통합합성 등업원 등업원 등업원 당근 연구 한국 하는 모양 연결 중심 소스 요즘 열대 최상	~%&%~24%2 <b>*</b> 88%
		· 설명주요도 문의도로 의료교육 학교교육 최고교육은 문의로 학교 학교 학교 학교 등등 등 사용학교 등등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등	<u> </u>
	STATION.	Marken Courses A Courses A Courses A Courses A Course A C	i. W. Transprones. Macificine Hat. Edimoniton. Solution of Mandele Ou'A specific of Jenses Prince A liver. Prince A liver. Omigny Bantleford. Calgary Calgary Moose Jaw.

•	).5
000 5 00 000000 H; H00; 000 000000 	о него снаявесес - сенесосено сене ж
තිබුහි හි ඉබ තුපුලිස්ක ක පිරිමු නමු නමු නමු කිරීමට නමු කිරීමට කි	៥ មិសិឌីន ១៥សិនីតំបត់និង មិនិបត់ស៊ីស៊ីស៊ីស៊ីស៊ីស៊ីស៊ីស៊ី និ និងសេខ មួយទីស្រីការាល ស្រុក សេខកក្សាកា America
- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	ស ក្រុមិន មានសមានមក្សា ក្រុម គេមានមានសុខ មាន ភា ភា ភា
855 15 8 88 829 1518 88 8	9.82==. RETAGERSSALT 588855BB 5888 B
##   1   2   2   3   3   3   4   5   4   5   5   5   5   5   5   5	다 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그
	######################################
	20
	*
	= 1111115436 1.4511148 1.114111111111111
	# : ### ##############################
<u> </u>	### ##################################
등 그 · · 원 : · · · 오 : · · · · · · · · · · · · · ·	
9 % 7 7 1 1 1 9 Z 1 1 1 E 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- 이 : 독급교 중소교육수업수 : [-x8 : 4 - 설립수 : 4 - 11 - 1
	- 하 - 하 - 하
**************************************	- 현 : 영남는 '중요요청소나라의 '무점의 ' 현 : 현 :
<u> </u>	ு வளது இது இது தல்ப-வ   — து தி ச   சன்சு தி இது தி
<b>∞</b> ∞ ∞ = : + <u>=</u>	····································
- <u>M - e                                </u>	- 현실 (현실역 (설명표절위하다음 : (파시티 : 현실 (파파제 : 15) (1) : (1)
	w
0.00 mm = 55 mm	
	-1174 1417211111111111111
	- 아 다 :   (1975년 - 1975년   1975년 - 19
	6 :5656 50000x3-0 500000000000000000000000000000000000
<b>호텔 : 1월 : 18 : 18 : 18 : 19 : 19 : 19 : 19 : 19</b>	4 4845 498888888 558588888888 4588 5
	i e
- 825명 프 (항상 열대시대당동 ) 최대 (영화점 (영화대 영화대 영화대 영화 영화 영화 (영화 영화 영화 영화 영화 영화 (영화 영화대 영화대 영화대 영화대 영화대 영화대 영화대 영화대 영화대 영	# # # # # # # # # # # # # # # # # # #
0 0 0 0   1 0 0 0 0 0 0 0 0 0 0 0 0 0	Audited (Medicalogonia) candodendade (medicalogonia)
	e leggia integradar entre-ristament cado e
· 교육당 [경 ] 경송   영향하다 (전 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기	# \$888   ### # # # # # # # # # # # # # # #
1	7.055 (68 ) 6 (8 ) 28 (8 ) 6 (8 ) 6 (8 ) 6 (8 ) 7 (
- 4 : : : : : : : : : : : : : : : : : :	- 조 : : : :
	8
7	8:::: 888.
	8
- <del>4-212-62-62-62-62-62-62-62-62-62-62-62-62-62</del>	######################################
。 \$35555555552555555555555555555555555555	\$93\$\$55\$413111143\$\$311\\\$55\$\$\$\$\$\$\$\$\$\$\$\$
	라도국국국국학학자학교학교학교학교교학교학교학학학교학교학교학교학교학교학교학교학교
\$ ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !	
Mar	oury  defined  for the property of the propert
Henry	bonness of the control of the contro
N, W. Transtroness.—Com.   Commission Manched	CHARRON  CHA
a apagaagagaagagaagagagagagagagagagagaga	eringangangangangangangangangangangangangan

Œ.	
ž	
Ξ.	
<u>7</u>	
-	
<u>=</u>	
$\supseteq$	
7	
ز	
=	
7	
Z	
7	
$\circ$	
Ŧ	
=	÷
Z	e r
$\Box$	ž
5	2
=	Ë
≍	Ě
ੁ.	~
_	٠Ē
$\Xi$	tel
Ξ	g.
Ξ	≗
>	=
$\Box$	· <u>F</u>
Τ.	Ţ
Ž,	ğ
С	ē
ATIO	Ē
÷	÷
ij	Ē
٠.	0.0
Ξ	ž
~	
	٠,٢
Z	· .
NO	· X
LION	· .
ATION	rel • Sc
TATION	Lovel Sc
PITATION	a Lovel
SIPITATION	Sea Lovel *St
RCIPITATION	to Sea Lovel . Sc
RECIPITATION	ed to Sea Lovel *St
PRECIPITATION	uced to Sea Lovel *St
D PRECIPITATION	reduced to Sea Lovel *St
ND PRECIPITATION	or reduced to Sea Lovel *St
AND PRECIPITATION	not reduced to Sea Lovel *St
AND PRECIPITATION	ter not reduced to Sea Lovel *St
ND AND PRECIPITATION	meter not reduced to Sea Lovel *St
IND AND PRECIPITATION	remeter not reduced to Sea Lovel *St
WIND AND PRECIPITATION	Barameter not reduced to Sea Lovel *St
WIND AND PRECIPITATION	a. Barometer not reduced to Sea Lovel Sci
E, WIND AND PRECIPITATION	a. Barameter not reduced to Sea Lovel Sci
TRE, WIND AND PRECIPITATION	a. Barameter not reduced to Sea Lovel . St
FURE, WIND AND PRECIPITATION	a. Barameter not reduced to Sea Lovel
ATURE, WIND AND PRECIPITATION	a. Barameter not reduced to Sea Lovel
RATURE, WIND AND PRECIPITATION	a. Barameter not reduced to Sea Lovel
ERATURE, WIND AND PRECIPITATION	a. Barometer not reduced to Sea Lovel
IPERATURE, WIND AND PRECIPITATION	a. Barameter not reduced to Sea Lovel
SMPERATURE, WIND AND PRECIPITATION	a. Barameter not reduced to Sea Lovel
PEMPERATURE, WIND AND PRECIPITATION	a. Barameter not reduced to Sea Lovel
TEMPERATURE, WIND AND PRECIPITATION	a. Barometer not reduced to Sea Level
E, TEMPERATURE, WIND AND PRECIPITATION	a. Barometer not reduced to Sea Lovel
RE, TEMPERATURE, WIND AND PRECIPITATION	a. Barameter not reduced to Sea Layed
TRE, TEMPERATURE, WIND AND PRECIPITA	a. Barameter not reduced to Sea Lovel
TRE, TEMPERATURE, WIND AND PRECIPITA	a. Barometer not reduced to Sea Lavel
TRE, TEMPERATURE, WIND AND PRECIPITA	a. Barometer not reduced to Sea Level
PRESURE, TEMPERATURE, WIND AND PRECIPITATION	a. Baremeter not reduced to Sea Level
TRE, TEMPERATURE, WIND AND PRECIPITA	a. Barameter not reduced to Sea Level
TRE, TEMPERATURE, WIND AND PRECIPITA	a. Barometer not reduced to Sea Lovel

			96
		Zer of Pogs.	0 H0 000 0H00000000H0000 H00 0D0 .0 000H000T00 H001H00H0H0H
		seroruk 10.02 SerorThunks	
-		Days with '01 or No. of Fair days	್ಯ ಈ ಏಕೆಯ ಕಿಕ್ಕಾಕೆಯೇ 'ನಿರಾಣ ಸಕ್ಕ' ಅನಕ್ಕೆ ಇಕ್ಕೆ ಸಹ ನಿರ್ವಹಕರ್ಯಕರು ಮುಂದು <u>ಮಾಡುತ್ತದೆ</u>
	TON.	Herviest fall in month.	# 188 hd 1 900000000000000000000000000000000000
	TAT	эметейтей (1986).	· · · · · · · · · · · · · · · · · · ·
	Рвестритаттом.	Junouty	# 첫부 학생님 유행됐다포요프라요요한다라 역사의 [ 연간은   그는 보다노우프라마요지   명합문학하였음[#출출
	WIN	-ib bas stad most duitest	
	VELOCITY OF WIND	Highest day's	11   1   1   1   1   1   1   1   1   1
	VELOC	Mean unles	
		Total number	: (2) 1   2   3   3   3   3   4   4   3   4   4   1   1   1   1   2   2   2   2   2   2
		G G	: - : : 4 : : : : : : : : : : : : : : :
	PROM	·W -N	· · · · · · · · · · · · · · · · · · ·
	1.6 G.	W	:: # [ : [] : : : : : : . # = 2
	OF WIND	m,8	- 「
	N C	S	
4	DIRECTION	S' E'	- 1.6.1. カー・1. 20日 5月57511.2 1 日・ エロフ・1 5 1 2 1 2 5 4 5 4 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5
	DIR	Е.	
		Z'E	
=		cloudeds.	
¥	[919] <sub>1</sub>	No. of day comp	(a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c
		Means another	
š [ '		Dewpoint.	
3	- 01n	Rean temperat	
		Date. Mean daily	3 18 312 869613643 168863 1887 314 77 86886538 286853 1111 7 27 7 7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Į.		Lowest	######################################
100	URR.	Date —	□ 388 288 288 28388888888222 (328 882 882 888 288 822 1 888 8 8 8 8 8 8
3	<b>FEMPERATURE</b>	Highest.	9 - 9 - 9 - 9 - 9 - 9 - 9 - 9 - 9 - 9 -
neer	TRMF	J719*dostre1	· · · · · · · · · · · · · · · · · · ·
2		Рійетенсе Ігош атетаке.	
Ter no		Menn	######################################
Daronic		Кврке	
3	KE.	Lowest	
H	Рякзвикк	Highest.	ម នគ.ត នគ.ត
	ď.	besulier misK	5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5
-	895	Elevation above	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		. Vengitude W.	表文をから至れなまます。 に表であまりなまますのではなるとなってフェック・ラック・ファック・ロッチをはなりによって、はどればなるを に表できまりなまますのではなるとなってファック・ティック・ファックをなるとなってあった。
1		Latitude N.	ស់តិងតាសាលារងការសេចរាជាសិក្សាលាក្រុកបានដំណើនការបានកិច្ចបានការបានការបានការបានក្រុមបានការបានការបានការបានការបានកា សិក្សាលាការបានការបានការបានការបានការបានការបានការបានការបានការបានការបានការបានការបានការបានការបានការបានការបានការបាន
Ì			######################################
		.:	finand.
		I 0 N	in in the leading of
		STATION	The property of the property o
		S. T.	OSTATION—I Continued Designated Continued Designated Continued Con
			DSYADO-IC MINIOUS Bloombook Collingwood Co

		91
= 0 0 0 0 0	10-13-100 10-19-100	
0 0 04		
9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9		<u> </u>
2 8 8	898548548	물질환경은 낡다 . 영우 다 유연 유연 : .등 다
		- 48부분학 19명 : 1명 : 1 명 : 1 표표 내학 후
	00000000000000000000000000000000000000	- 77777:77:57:5°: ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° °
.i 9 9 15	으로 프라이트 이 이 의 의 의 의 의 의 의 의 의 의 의 의 의 의 의 의 의	35277 RV RS 4 RS ES 8 8
. z	15 m 25 m	13 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
1111	212 EZ E : : :	
	g     - g -	25-2=
	8-8754:17	- 플론용문용 : [용 ] : 1 : 1 : 1 : 2 : 2 : 2 : 2 : 2 : 2 : 2
	<u>=</u> Em=28. =	58557 [= : : : : : : : : : : : : : : : : : :
	= - : - = = : : - : = : : = : : : : : :	- 독일까[] 역 : 13 : 11 : 11 : 1 : 1   1
	8487°55	
t- 10 11 × 3	na a Berlia	65221 8 : : : : 5 42 33
<u> </u>	========	로 <sup>프</sup> 프랑크 : : (* : : : : : : : : : : : : : : : :
= = = ==	x=====================================	<u> </u>
64 to 1 to 121	248931- 14	83-82 h c 5 -
x :- : : = :=		लक्क्ट्रा व है है है व व व व व
1- 2   5	= = = = = = = = = = = = = = = = = = =	<u> </u>
1117	- a++eac	- dioi i
	9:1.7:::	
- H H H H H R	9 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	-in moss-	x m m c
	######################################	
* 18 13 1775 0 0 0 0 0 0	50001-5103 5001-5103	= 등등급원 (공입   급급   라 [문자 크큐   [연 (연 - 연료원 (원자 ) 다 : 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
. र := : शत≏	181818181	- 유료까지를 통해 : (원화 : 17 T T 제 : 19 19 19 19 19 19 19 19 19 19 19 19 19
· · · · · · · · · · · · · · · · · · ·	######################################	98989 92 29 98 67 88 8 8 88888 92 37 8 11 88 8 8
± ∞ : ∞ −	8828955555	
, + ; + ; -   0 : 0 : 0 : 0 : 1	1	
2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	882P28283 2552P28225	용용용용요 (공장 : ) 등요 : 8 (요요 #영 : 영 명 하수에 하는 영요 : 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
	868 8	3868 : :::::::::::::::::::::::::::::::::
<u> </u>	255 7 353	유명경원 [ [ ] [ ] [ ] [ ] [ ] [ 명 [ ] [ ] 원 [ ] [ ] [ 원
2	858 B : : :	5555 : 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
<u>-                                    </u>	888 8 · · · ·	- 동후용용 : : : : : : : : : : : : : : : : : :
<u> </u>	ଲିଶିଲି ଲି	aaaa ijii ii ii a ii a
	<b>2514</b> 88888 ; ;	= = = = = = = = = = = = = = = = = = =
. 23222222 - 2323322 - 2323322 - 2323322 - 2323322 - 2323322 - 2323322 - 2323322 - 232332 - 23232 - 23	868888666 86888666	සමසමෙල්ලිප්පම්පම්පුවල සමසම සමසම පු සම්බුද්ධප්පම්පුවේද සමසම පුවුක්ම පු
· 82334.222	Predericion   15 m	Holister
1 1111111		
DEREC—(Continued) (Crindstone Anticosti, W. Pt. Anticosti, S. W. Pt. Abidio Bird Rocks Roberval Roberval Roberval Roberval St. Anticosti	EW HRINSWUE : Predericion Chathan Charlan Grand Marsh Toni Leprenax SA, John Dalhonsu Dalhonsu Nandeon	Markey South States of South S
	# 1 H M H H H H H H H H H H H H H H H H H	
F. KE SK	Swr Ston dams Tores Tores	this is the second of the seco
EC—( indst icost iloost filbi. iloost filbi. iloost	EW PRESSAFICE: Fredericton Clearlan Mann. Complete Leptentx Fredericton Complete Complete St. John Dalbonste St. Stephen Manneton Nuneton	was Sunta Allen Su
Quency   Continued	New Heriyswere : Frederich Chatthan Crand Marah Froderich Froderic	Mark Septer   1   1   1   1   1   1   1   1   1
	· ·	

### PRECIPITATION AT STATIONS REPORTING RAIN, WEATHER, &c., DURING AUGUST, 1899.

		1	Cainfali	l.,								
STATIONS.	Amount in inches	Days 101 or Over.	No of Fair Days.	Heaviest Pall in Month.	Date.	THENDER OR LIGHTNING, &C.	Remarks.					
British Colletta Goldstram Lake Langley : Albern : Royal Oak : Nanatus Cumberland.	2 42 4 56 2 40 1 80 1 77 3 04	11 12 12 12 6	23 20 19 19 19 25	0 61 1 42 0 35 0 53 0 75 1 02	9 15 26 15 16 10	1, 5, 19,	20th Robins collecting.					
N. Thornwood's Worl Feaver Hills Immstad Strebng . Estevan Saltreats Duksbury Ronkon . Courts .	6 43 12 25 4 54 2 15 5 52 7 38 2 66 2 66	20 20 4 5 5 18 10 6	10 11 27 26 26 13 21 22	1 72 2 30 2 30 1 00 1 40 1 25 1 01 0 60	14 15 8 15 19 14 6 7	6, 25, 4, 25, 7, 8, 9, 16, 18, 24, 6, 7, 8, 25, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7,	Snow flakes on 27th. Crock & riv. all booming. No frost yet 31st. Frost on 21st. Frost on 3rd, light. 1st trost on 30th.					
Maxifold Harthey Elger Cakbanik Gretna Solkitk Cartwright (1) Morebin Greenwood Pembina Crossing Normay Belmont Cartwright (2) Char Spring Shoal Lake Beave Crock	2 42 1 100 1 145 1 140 1 145 1	9 15 6 4 8 10 3 4 7 13 9 7 4 2 6	22 16 10 23 21 25 27 27 27 28 28 28 29 25	0 90 0 42 9 88 0 80 0 94 2 59 1 20 1 43 3 97 0 72 0 72 0 75 0 76 0 76 0 56	85/81-81-80-56/80-6	1, 7, 9, 16, 19, 22, 25, 28, 3, 8, 15, 7, 15, 22, 28, 27, 15, 22, 28, 27, 10, 10, 11, 15, 10, 19, 22, 25, 28, 21, 9, 10, 16, 19, 22, 26, 28, 16, 24, 9, 16, 22, 28, 29, 29, 29, 29, 28, 29, 28, 29, 28, 28, 28, 28, 28, 28, 28, 28, 28, 28	[nipped, 31st, potatoes & corn 31st, Frest.]  31st, Slight frest.  31st, Slight frest.  [31st, frest, 5th, Slight frest; 29th]  Frest, 29th, 31st, 4th, light frest; 13th, frest 1th, Frest.					
OSIMIO Golerich Googs (town Aurora Smith's Fall. Woming Dutton Coldstream Finetaweushene Huntsville Wooder Lansdowne Crayloin Parima Mull and Scarbore Watford Emissione Elzin Thompson Uxbridge Dealtown Pravide nee Eay Sparrow Lake Arden Nottawasiga Island Emissione Simila Roblin's Mills Williams Herwill Roblin's Mills Williams Herwill Lanedeh Cherry Valley Ursa Lome's Ferry Primestom Orangewille Whatford Now Session Colories Forty Primestom Orangewille Williams New Hards Williams Cherry Valley Ursa Lome's Head William Grovy Officer's Ferry Primestom Orangewille Williams New Hartswitch Pont Esculumace Novy Scotty— Port Morgen Pet Liver Port Morgen Pet Elst vin Marrow River Mouras River	THE LET TO BE OF THE SERVICE OF	2+1+2222×+20088+2220566884+4216226852821+26625551+2885528221+26625551+2885528221+266255551+2885528221+266255551+2885528221+266255551+2885528221+266255551+2885528221+266255551+2885528221+266255551+2885528221+266255551+2885528221+266255551+2885528221+266255551+2885528221+266255551+2885528221+266255551+288552821+266255551+288552821+266255551+288552821+266255551+288552821+266255551+288552821+266255551+288552821+266255551+288552821+266255551+288552821+266255551+288552821+2662555751+288552821+2662555751+288552821+2662555751+288552821+2662555751+288552821+2662555751+288552821+26625555751+288552821+26625555751+288552821+2662555751+288552821+26625555751+288552821+26625555751+2885575751+28857575751+28857575751+28857575751+28857575757575751+2885757575757575757575757575757575757575	តម្រងមក្សនាក្រុម មានប្រជាជាក្នុងក្រុម មានប្រជាជាក្នុងក្នុងក្នុងក្នុងក្នុងក្នុងក្នុងក្នុង	0.1473905236404	12 19 9 21 11 11 11 12 22 21 12 10 10 26 22 32 21 11 11 11 11 12 11 10 10 6 22 32 21 11 11 10 10 6 22 33 22 11 11 11 10 10 6 22 33 22 11 11 11 10 10 6 22 33 22 11 11 11 11 11 11 11 11 11 11 11 11	3, 4, 9, 10, 11, 12, 26, 9, 10, 11, 31, 11, 12, 21, 2, 12, 21, 27, 4, 21, 22, 22, 22, 22, 11, 21, 21, 21, 21						

Thunder recorded on-

- 1. N. Sister Rock, Pipestone, Moose Jaw. Cockburn Island, Cannington Monor, Muskowj etung, Medand, Providence Bay, Elgin.
- Montreal, Kinmount, Beatrice, Bancroft, Erasmus, Agineourt, Paris, Oton deec, Port Dover, Knee Hill,
   Whiteside, Duck Lake, Port Hope, Sprucedale, Emsdale, Sparrow Lake, Parry Sound, Kingston, Syaney,
   Gravenhurst, London, Deseronto, Guelph, Lindsay, Scarboro, Croydon, Wooler, Pembina Crossing, Brome,
   Peterboro'.
  - 3. Gosfield S. Ridgetown, Arden, Quebec.
  - 4. Calgary, Agincourt, Red Deer, Welland, Lansdowne, Cape Magdalon, Quebec, Father Point, Harleybury,
- 5. Chicoutimi, Cape Chatte, Red Deer, Knee Hill, W. Beaver Hills, Alberni, Dalhousic, Nelson, Mesquito Creek, Calgary, Quebec, Father Point.
- Moose Jaw, Calgary, Red Deer, Crane Lake, Duck Lake, Estevan, Dirt Hill, Touaceo Plam, Macleod, Kamboos, Medicine Hat, Swirt Current, Regina.
- Pictou, Portage la Prancie. Gatesgarth, Calgary, Duck Lake, Coutts, Pembir a Crossing E zin, Earnardo. Battleford, Regina.
- 8. Gatesgarth, Muskowpetung, Red Deer, Duck Lake, W. Beaver Hells, Selkirk, Tobacco Plains, Maclood, Medicine Hat, Swift Current, Be muda, Regina.
- 9. Moose Jaw, Calgary, Cumington Manor, Muskowpetung, Red Deer, Kass Hell, Hamilton, Duck Loke, W. Beaver Hills, Clear Spring, Wyoming, Belmont, Elgin, Burnua, Metaline Hat, Battlefork, Qu'Appelle, Minnedosa, Swift Current, Sydney.
- St. Ann's, Point Chell, N. Nicomen, Cargary, Red Deer, Gossiela S. Walland, Kree-Hill Wilton Grove, Lion's Head, Dutton, Demont, Pembina Crossing, Trebethe, Stony Moure et al Barnaciae, Mediche Hat, Winnipeg, Port Scanley, London, Regina.
- H. Savanne, Point Clart. Cockbarn Island. French Creek, Evenius, Cuch ice, Pactern Welland, Port Hope, Owen Sound, Princet r. Ursa, Jermyn. Scarbert. McTand. Condsto em. Medicine Har. What River, Port Arthur, Port Stanley, Permuda, Lindsay, Birnum, Peterbore, Wesselstock, Stony Mountain.
- 12. Montreal, Kinmount, Beatrice, N. Nicomen, Bancroft, Agincourt, Weiland, Menfold, Haliburton, Whiteside, Port Hope, Sprucedine, Arden, Jernayn, Weider, Huntsvike, Brone, Penetang fishing, Peterboro, St. Agathe, Rivers Inlet, Collivater, Parry Sound, Quebec, Gravenburst, Beser nto, Dallam, Lindsay, Haileybury.
- 13. Calgary, Collingwood, Perce, Arden, Point Escuminae, Murray River, Fredericton, Kamboops, Medicine Hat, Burtl, Prince Albert, Quebec, Father Point.
  - 14. Pictou Red Deer, Knee Hill, Wiarton, Parrsboro, Trugo, Charlottetown, Bermuda,
  - 45. Knee Hill, Selkirk, Awene, Treheme, Bartleford, Swift Current, Conform
- Brandon, Portage I. Prairie, Musk supetung, Perce, Clear Spring, Beamont, Pembine Crossing, Elgin, Rosebank, Treherne, Stony Mouritain, Minnedosu, Charlottetown.
  - 17. N. Sister Rock.
    - 18. N. Sister Rock, Pilot Bay, Moose Jaw, W. Beaver Hills, Nelson, Trenerne,
- Cockburn Island, Hi. Jow, Brandon, Portage La Prairie, Calgary, Muskowpetung, Providence Bay,
   Belmont, Pembina Crossing, El., a. Barnardo, Qu A) pelle, Winnipeg, Minnedosa, Contkup, Regina.
- N. Sister Rock, Co keurn Island, Wolfville, Thompson, White River, Halifax, St. John, Regina,
   Haileybury.
- Montreal, Kinmount, Pipestone, Beatrice, Bancroft, Otonabee, Welland, Meaford, Wooler, Haldourton, Crane Lake, Port Hope, Ursa, Cherry Valley, Roblins Mulis, Emsdale, Huntsvale, White River, Bissett, Kingston, Lindsay, Haileybury.
- 22. Montreal, Moose Jaw, Hillview, Brandon, Arden, Parma, Lansdowne, Clear Spring, Belmont, Elgin, Brome, Aweme, Treherne, Medicine Hat, Minnedosa, Quebec, Yarmouch, Conikup.
  - 23. Jermyn, Brome, Battleford, Yarmouth, Grand Manan
  - 24. Red Deer, Gosfield S., Ridgetown, W. Beaver Hills, Treherne, Prince Albert, Swift Current, Bermuda.
- Pipestone, Moose Jaw. Hillview, Dirt Hill, Elgin. Brome. Barnardo. M dicine Hat. Swift Current.
   Quebec.
- St. Ann's, Savanne, French Creek, Portage la Prairie, Gosfield S., Otonabec, Welland, Belmont, Min nedosa, Bermuda.
  - 27. Stony Creek, Duck Lake, Jermyn, Wooler, Port Arthur, Port Stunley, Yannouth,
- 28. Wolfville, Clear Spring, Belmout, Pembina Crossing, Rosebank, Parrsholo, Truro, Stony Mountain, Port Arthur,
  - 29. Brandon, M. skowpeting, Minnedosa, White River, Port Arthur.
  - 30. Thompson, White River.
  - 31. Hazlemere, N. Nicomen, Agincourt. Providence Bay, Quebec, Oonikup.

Acresa Re Idel

- Where the class of x is noted by the excitor, it is given, (I) by x, the brighest, (I) the following tribution.
  - Cape Mugd., b.n. Cape Chatte, H. Quebec, IV.
  - 2. Gatesgarth, Go. getown, IV., Aweme, II
- Menford, IV., Birileybury, III., Red. Deer, II; Gatesgarth, fine; Hillview, I., Clontarf, IV; Cockburn Island, Savanne, Pembira Crossing, III; Scarboro, Aweme, II; Channel Island, IV. St. Agathe.
- Erasmus, Hillyr w. H., Savanne, Pembina Crossing IV: Aweme, III: Minnedesa, I. Gravenhurst, II: Haileybury, IV.
  - Erasmus, Cockern Island, Savanne, Chicoutimi, Georgetown, IV., Minnedova, 4: Haileybury, IV.
  - 6. Channel Island, IV., St. Agarbe, Father Point, Haileybury.
  - 7. Truco, IV., Swift Current, IV.
  - Aweme, 111
     Aweme, 1V. Eicher Point, Gravenburst, IV.
  - 10, Point Rad.
  - 12 Menford, IV., Georgetown, IV., Midland, II
- Hillyi w, IV., Pembana Crossing, IV.; Georgetown, III. W. Beaver Hills, IV., Medicine Hat, IV.;
   Qu'Appelle, IV., Quebec, IV., Haileybury, IV.
  - 14. St. Agathe.
  - 16. Portage la Prorie, Channel Island, IV; Haileybury, IV.
  - 17. Moose Jaw. Pembina Crossing, IV
  - 18 Pembina Cr. s.i.g. IV.
  - 20. Aweme, H. S. Agathe, Barnardo, IV
  - 24. Quebec, 1V
  - 27. Cape Magdalen, Chicontimi, Medicine Hat, 111: Quebec, IV.
  - 28 Gatesgarth, Hillyiew, IV., Barnardo, IV
- Red Deer, H., Gatesgarth, Moose J.ev, Sussex, Pembina Crossing 4V; Georgetown, IV; West Beaver Hills, H1; Aweme, H1. Truro, IV., Barnardo, H1; Medicine Hat, H1. Prince Albert, H1.
- 30. Duck Lake, IV. Portage la Portage, Hillview, I: Savanne, Cape Chatte, III: Sussex, Pembina Crossing, III: Aweme, II. Channel Island, IV: Truro, IV: St. Agathe, Barnardo, II: Minnedosa, I; Father Point.
  - 31. Duck Lake, H. Savanne, Cape Chatte, H.; Channel Island, IV; Barnardo, IH; Minnedosa, I.

## PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF AUGUST, 1899.

	HOURS ENDING															
	5 A.M.	А.М.	7 A.M.	е 4.М.	Y•X*	lo A.M.	11 A.M.	NOON.	1 r.m.	2 P. V.	3 P.M.	4 P.M.	P. M.	Р. Ч.	7 P.M.	P.M.
VICTORIA	0.00	s	" 31	n tā	0.38	7 03	+ 53	11.54	0.51	n **	- 55	0.65	II 59	0.50	0.15	U all
KUPER ISLAND																
AOASSIZ	0.0	0.00	- 11	0.15	0.15	9.24	11.25	1.25	11.2.7	0 - 2	55	0.39	0.02	- I+	1) 4	0.00
BATTLEFORD	0.17	0.44	0 17	0.46	$(1-\frac{4}{2})^{\frac{1}{4}}$		511	□ *3	0.56	+ 55	54	0.51	0.47	H nã	0.05	0.00
Indian Head	0.00	((-0))	0.05	() 10 M	0.57	0.65	0.65	0.70	0.60	0.67	· +13	0.73	0.65	0.37	0.11	$\alpha \cdot \Omega_{\lambda}^{\bullet}$
Brandon	0.00	0:11	0.47	0.52	0.71	12	$f\in \mathcal{C}_{\infty}^{\sigma}($	0.31	6.62	0.07	0.71	0.51	0.50	0.44	0.27	() (2)
Winnipeg	S	0.24	0.50	0.59	0.60	$\alpha \cdot \beta \overline{q}$		0.75	0.77	0.77	. 71	0.59	0.66	0.53	0.25	si.
DURHAM	0.00	0.00	0.15	0.82	d r	0.50	167	i 19	0.72	17.	0.78	0.79	0.61	0.56	0.31	0.00
WOODSTOCK	0.09	0.15	0.34	0.5	11.74	(7)		11 4 7		0.75	11.77	0.71	~ 71	0.73	0.17	0.7(4)
Товомто	0.00	0.0	0.36	0.66	0.75	1) .	1.73	0.71	0.7.	0.75	Ġ.	0.75	0.79	0.56	0.25	(H)
LINDSAY	0.00	0.12	0.03	0.75	0.73	1.76	. 74	0.77	107	0.73	- 75	0.77	0.70		1.54	0.15
BARRIE	n (0)	0.09	0.62	0.71	0.77	0.54	1	0.83		0.75	11.50	0.76	0.64	11 34	0.07	() (9)
Kingston	0.60	S	0.28	(1.70)	0.70	0.71	4.77	0.62	11.7	0.77	11 75	11.77	II fin	0.54	0.161	0.00
OTTAWA	0.00	0.16	02	0.65	0.70	0.70	0.75	0.82	0.75	11 76	0.75	0.77	0.07	0.54	9.15	() * (N)
Montreal	0.01	0.13	0.42	0 (1)	0.79	0:71	0.73	0.71	0.77	(1.50)	0.77	0.72	0.50	0.24	0.00	0.00
FREDERICTON	0.10	DE 407	0.75	, -9	11.7%	1.7.	1.76	1.82	11.4	- 76	0.70	0.65	0.54	0.12	,s	0.00

	Victoria.	KUPER ISLAND	AGASSIZ.	BATERFORD.	INDIAN HEAD.	Brynon.	Winnippe.	DURHAM.	Woodstock	Токомто.	Lindsay,	BARRIE.	KINGSTON,	OTTAWA.	MONTREAL.	<b>Ракренсто</b> м.			
MEAN PROPORTION FOR MONTH (Constant sunshine being 1.)	0 42		0.22	0.46	= 48	0 51	0.58	0.55	9.61	0.61	0 65	0 65	0.5	0.62	0.64	0:60			
DIFFERENCE FROM AVERAGE	-0 10		-0.26	-0 12	-0.03	-0.10	-0 2	_	× 41-11,	-0 ÚT	- : 12	-0 14	- 0 +11	-	- 0:06	-0.10			
MAXIMUM DAILY AMOUNT	0.85		0.72	0.95	0.50	0.98	0.96	0.30	0.92	0.56	0.5~	0.53	0.56	0.89	0:::5	0.34			
DATE	6-30		2	25	4	26	25	1-	- 6	- 6	17	15	y	16	16	14			
No. of Days Completely Clouded	1		15	9	2	+	2	4	1	0	1	0	0	n	()	3			

#### FORECASTS FOR AUGUST, 1899.

The forecasts is simple by this office at 11 p.m. each night are posted up at every telegraph station in Canada, and are for the 14 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 1000. These were divided as follows:-

	No.	$V\to R+F\to D$ .									
DISTRICT.	Issued.	No. Fully	No. Partly	No. Not	Percentage						
MANITOPA	.3.1	50	10	9	85 9						
LAKE SUPERIOR	111	41()	18	**)	89.2						
Lower Lake Region	115	107		f)	96.5						
Georgian Bay	113	\$05	5	3	95.1						
Ottawa Valley	105	117	5	";	94.8						
UPPER St. LAWRENCE	}+15		6	4	93 3						
LOWER ST. LAWRENCE	112	1.2	7		94-2						
SCLE	120	100	12	2	9318						
Maritime Provinces	120	102	17	1	92.1						
Total	1000	~-1	~s	28	92 8						

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

The forecasts and sterm warnings were issued by Forecast Odicial, B. C. Webber,

Abstract of Observation, at Fort Good Hope Mickenzie River. Lat 66, 20° N. Long, 128, 25° W. From as March, 1898, to 30th June, 1899, by the Rev. R. P. Seguin.

	Тімеральта.					Wiso Direction pros								Rain. Snow.						78.
	Tara.	2p-m. 3	Spin Mean	Max. Mm.	 ;	N. E.		i ,	·;	= :		=		Amt.	lys.	Amt.	dys.	Gales.	Fogs.	Fair Da
Marie 1878 April May May May Aut Aut Aut Aut September September September September September Marie May		62 2 5 ± 6 6 1 3 5 6 1	8 8 7 0 + 0 5 7 0 + 0 4 30 0 - 0 4 8 0 0 - 0 4 8 - 0 1 0 - 0 1 8 - 0 1 0 - 0 1 2 - 0 1 4 - 0 1 3 3 6	70 - 20 10 - 470 177 - 560 180 - 700 21 - 210 50 - 220	10 144 15 15 16 16 16 16 16 16 16 16 16 16 16 16 16		Poster - 1985 984 94 94 94 94 94 94 94 94 94 94 94 94 94	55 131 1 5 1 5 0 5 5 9 0 1 6 7 12 12 12 12 12 12 12 12 12 12 12 12 12	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0207.1300000000000000000000000000000000000	15 15 15 15 15 15 15 15 15 15 15 15 15 1	21 11 22 40 51 0 11 0 84 14 15	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10. 00 00 0 00 0 00 0 00 0 00 0 00 0 00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	m. m	4 4 6 5 3	4 1 2 0 2 5 0 0 0 0 0 0 0 0 0 0 2	5 0 1 0 1 2 2 1 15 1 16 4 7 0 0	26 23 5 5 7 7 22 5 3 2 6 5 5 5 4 1 2 6 4 1 2 6 4

The Maximum and Minimum Temperature are from the readings of the ordinary Thermometer at Observation hours.

R. F. STUPART,

Director.

Meteorological Office, Toronto, 26th Scotember, 1899.

## METEOROLOGICAL SERVICE, DOMINION OF CANADA.

# Monthly Weather Review.

VOL. XXIII

SEPTEMBER, 1899.

No. 9

#### INTRODUCTION

In compiling the present Review the principal data made use of are the telegraph reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

#### REMARKS UPON THE WEATHER.

The weather in Canada during September was chiefly remarkable for the exceptionally bright warm weather which prevailed throughout the greater portion of British Columbia and the North-west Territories, also the cool weather with much cloud and heavy rainfall in Ontario. Elsewhere the weather did not differ much from normal.

In the Province of British Columbia the weather was unusually fine and warm the temperature being well above average in most places and the rainfall generally below. The ripening of grain, so much retarded by the cool wet weather of August, made rapid progress, and losses expected were fortunately not realized.

The weather conditions in the North-west Territories were even more favourable than in the last named province it being exceptionally fine and warm, whilst the rainfall was about average. The maximum temperatures which occurred at most places on or about the 25th, were generally well above 80°. Frosts were reported from all stations and at some places they were severe, nevertheless little damage appears to have been caused thereby.

In Manitoba the weather did not differ much from normal excepting in the amount of bright sunshine which at most places was unusually large; in the eastern portion however it was somewhat cooler than usual and at most places the rainfall was below average. The lowest temperature occurred nearly everywhere on the 29th, and 14° was recorded at Rosebank on that date. By the 30th vegetation had quite a wintry appearance.

In Ontario the weather was for the most part exceptionally cold, cloudy, and wet, more especially during the latter half of the month. Nearly everywhere the temperature was well below average and although the departure in the rainfall above average was only important in northern and eastern districts it was almost general. The maximum temperatures which were at most places between 80° and 90° exceeded the latter figure at a few stations. The frosts which occurred were unusually frequent and early, and in some districts were severe. These repeated frosts quickly showed their effect upon vegetation the trees taking on their autumnal tints, very early. Snow fell at many places during the last few days of the month, a depth of four inches being reported from London on the 30th.

The weather in the province of Quebec did not differ much from the normal excepting in a few districts; on the whole however it was somewhat cooler and more cloudy than usual, more especially during the latter half of the month. The maximum temperatures recorded only reached 80° at two stations, whilst the minimum temperatures were in many instances higher than in Ontario, 41° being the minimum at South-west Point Anticosti and 36° at Montreal. The trees changed colour towards the end of the month.

In New Brunswick the weather was almost normal, the rainfall however was somewhat below average at most places and in the vicinity of Monoton it was exceptionally dry. The maximum temperatures at most places were 80° or a little below and the minimum temperatures reported were from 42° at Grand Manan to 20° 5° at Sussex. The only gale recorded occurred on the 6th, when the wind registered 48° miles per hour at St. John.

In Nova Scotia the departures from normal were not important; it was however somewhat warmer than usual in most districts and at the larger number of stations the rainfall was above average. At most places the maximum temperatures were between 70 and 75°, and the minimum temperatures between 48°0 at Sable Island and 28°8 at Parrsboro. Most trees were still quite green at the end of the month. A strong gale from the west and northwest occurred on the 6th and 7th.

In Prince Edward Island the weather took much the same character as that in New Brunswick, the conditions being almost normal. Light frosts occurred at most places but vegetation was comparatively green on the 30th. Some considerable damage was done along the coast by a heavy gale which occurred on the 7th.—F. F. PAYNE.

#### ATMOSPHERIC PRESSURE.

The mean pressure was considerably above average from the Pacific Coast to the Upper Lake Region average or a little above in the Maritime Provinces, and average or a little below in Ontario and Quebec. The greatest amount above average was in Assiniboia 0·12 of an inch, and the largest amount below was at Montreal, 0·05 of an inch.

#### HIGH AREAS.

No. 1, which had first appeared on the North Pacific coast on the 27th of last month, was on the 1st Sentember centred in Northern Quebec whence it moved to the Gulf of St. Lawrence and then south over the Atlantic. No. 2 developed over Alberta on the 2nd, moved eastward to Lake Superior, then south-east to the New England coast and out to sea on the 5th. It was not a very pronounced area, but brought fine weather everywhere. No. 3 also first developed over Alberta on the 4th, moved to Western Quebec and then southward and off the middle Atlantic coast on the 7th. No. 4, after hovering on and off the British Columbian and adjoining States coasts from the 6th until the 11th, moved to the North-west Territories, then to the Lakes where it divided in two on the 14th, but reunited again on the 16th. It was an extensive area and brought fine weather throughout the country. No. 5 was an offshoot of the last area from which it parted on the 8th over Dakota; it passed eastward reaching Newfoundland on the 11th. No. 6 was comparatively unimportant; it first appeared over Northern British Columbia on the 15th, and moved south-eastward for a time, but was absorbed by No. 7 on the 17th when nearing the Lakes. No. 7 first appeared over British Columbia on the 17th, and thence moved to the North-west where it attained some energy, but soon passed to Northern Quebec, and apparently dispersed there. No. 8 was first noticed over Saskatchewan on the 20th. It was unimportant and of little energy, and took a south-east course to the Maritime Provinces, passing off the coast on the 24th, and causing cold weather throughout its course. No. 9 was an unimportant high, which first took definite form over Kansas and seems to have been absorbed by No. 8 on the 23rd, when nearing the Middle Atlantic Coast. No. 10, after hovering some time off the British Columbian and adjoining States coasts, was centred over Washington Territory on the 24th, from whence it took an erratic course more or less south-easterly until reaching the Carolina Coast, when it moved north-eastward up the Gulf Stream and out to sea. No. 11 first appeared over Northern British Columbia on the 27th, moved quickly south-eastward to Wyoming, then eastward to the Lakes being centred near Lake Michigan on the night of the 30th; it was of slight proportions at first, but soon developed into an area of importance and large proportions, covering at the end of the month the whole territory from Hudson's Bay south to the Gulf of Mexico and extending from Manitoba in the west to the Atlantic seaboard in the east.

#### LOW AREAS.

September was not a stormy month, although the low areas were numerous. In three cases areas moved up the middle Atlantic Coast, and two came from the Middle Mississippi Valley, but by far the greater number crossed the North west and passed eastward across the continent. The mean velocity with which the low areas travelled was 31.0 miles per hour. No. 1 first appeared over British Columbia on the night of August 30th, and on the 1st September was centred over Montana, whence it moved to Manitoba, and then east to Newfoundland, which it reached on the 4th, and for the most part was unimportant until it passed over the Gulf of St. Lawrence where it gave a moderate to fresh gale. No. 2 was also first seen over British Columbia on the 2nd, moved into Montana and then to the North-west, where it was joined on the 4th by No. 3. This latter area was on the 2nd near California, and moved quickly northward; the combined system then passing due eastward to Newfoundland, which it reached on the 6th. It was of moderate energy until it arrived at the Gulf of St. Lawrence, where it developed considerably and gave a fresh gale. No. 4 was at first noticed on the morning of the 4th, as centred over Arizona, from whence it moved north-eastward and may have been absorbed by No. 5, but its actual movement is uncertain. No. 5 was passing over British Columbia on the 4th, soon crossed to the North-west and thence moved eastward, reaching Newfoundland on the 8th, and showed little energy throughout. No. 6 was an area of slight importance, which first appeared over Alberta on the night of the 8th, and passed east to the north of Lake Superior where it apparently dispersed. No. 7, which seems to have been subsidiary to No. 6, was apparently centred over Saskatchewan on the night of the 10th; whence it took a south-easterly course to the Ottawa Valley and then north-east to the Gulf of St. Lawrence, eventually crossing Newfoundland on the 15th. It was a shallow depression until it reached the Lakes, where it caused fresh to strong winds and local showers, also giving showery weather in the eastern provinces. No. 8 was short lived and of little importance. It first appeared near Cape Hatteras on the night of the 11th, disappearing during the 12th off the New England Coast. No. 9 was an unimportant low, which after causing some showers in Alberta on the 13th passed southward and disappeared. No. 10 was quite unimportant,

arriving over Alberta on the 15th, it apparently moved to Lake Superior and then eastward, dispersing over Northern Quebec. No. 11 was a small shallow trough of low pressure, which first appeared over Missouri on the 17th, and soon extended to the Lower Lakes and St. Lawrence Valley where it caused a general rainfall. No. 12, which first appeared in the eastern portion of the Gulf of Mexico, moved quickly up the coast, crossfall given the Maritime Provinces on the 20th. It was unimportant as far as wind is concerned, but was accompanied by an excessive fall of rain, both along the Atlantic coast and throughout the Maritime Provinces. No. 13 was quite unimportant. It first appeared over Alberta on the 21st, passed eastward and dispersed near James Bay. No. 14 was first noticed as centred in Iowa on the 24th. It soon crossed the Lower Lakes causing strong winds and moderate gales accompanied by heavy rainfall there. After passing the Lakes it was joined by No. 15 on the 26th, which had first appeared over North Carolina the day before. No. 16 was the most important area of the month and was situated over Northern Alberta on the 25th, whence it took a southeasterly course to Lake Superior and on the 28th covered the whole of the Lakes and had developed into an important storm. It caused a fresh to strong gale throughout the North-west, Manitoba and the Lakes. On the 29th it quickly diminished in energy and passed as an unimportant area eastward, reaching the Gulf of St. Lawrence on the 30th.

#### WINDS.

In British Columbia southwesterly winds were the most prevalent, and whilst on several days fresh winds occurred there were no gales. In the North-west Territories, the general direction was westerly. No gales were recorded, although on several days strong winds prevailed. In Manitoba, the winds were mostly we-terly; two gales occurred, one on the 27th, reaching the force of a strong gale. One gale occurred on Lake Superior, otherwise the winds were for the most part moderate to fresh, and no special direction of wind was marked. In the Lake Region generally, north and west winds were most prevalent; the force of a gale was reached on four occasions; but in two of these the gales were only local. In the Ottawa and St. Lawrence Valleys the winds were generally moderate to fresh, no gales being recorded; whilst the westerly winds were most in evidence. In the Gulf of St. Lawrence the westerly winds predominated. There was one gale which was general throughout the Gulf and on three occasions the force of a gale was reached locally. In the Maritime Provinces the most prevalent winds were from a westerly direction, and whilst they were not as a rule strong, the force of a gale was reached locally on three occasions. One local gale was not warned for the Maritime Provinces; all the others were warned, but for one gale in the Gulf the warning was late at many stations.

#### TEMPERATURE.

The temperature was above average from Vancouver Island to Manitoba, nearly average in Eastern Quebec and the greater portion of the Maritime Provinces, and below average over Ontario and Western Quebec, and especially so in the more northern portions. White River was as much as 7 below, Bissett 5' below, and Montreal 4° below. Alberta and the North Saskatchewan Valley show the greatest amount above average, amounting to 3°.

The Highest and Lowest Temperature in each Province during September, 1899, were:

British Columbia,	90 0 on 15th at Agassiz.	29°5 on 28th at Revelstoke.
North-west Territories,	88 0 on 1st at Alameda.	20°0 on 18th at Moose Jaw.
Manitoba,	88°.5 on 1st at Aweme.	14°0 on 29th at Rosebank.
Ontario,	95° 0 on 7th at Cottam and Gosfield.	8~0 on 30th at Savanne.
Quebec,	85° 0 on 1st at Richmond.	23 '0 on 24th at Richmond.
New Brunswick,	80°0 on 18th at Chatham.	20°5 on 24th at Sussex.
Nova Scotia,	78° 0 on 4th at Port Hastings.	28°8 on 24th at Parrsboro.
Prince Edward Island,	76°6 on 18th at Charlottetown.	$33^{\circ}$ 0 on 24th at Hamilton.

#### PRECIPITATION.

The rainfall was largely above average over the middle and eastern portions of Ontario and in Western Quebec, below average in western and south-western Ontario, and also generally below over British Columbia. In the other portions of the Dominion it did not differ much from the average amount, except locally; it was however, for the most part, a little below average in Eastern Quebec, the Maritime Provinces, Southern Manitoba and the Qu'Appelle Valley, and above average in the North Saskatchewan Valley. At Toronto the average amount was exceeded by I-9 inches, at Ottawa by 2-4 inches, at Welland by 3-4 inches and at Haliburton by 3-8 inches, Montreal was 1-8 inches above average, and Quebec 0-6 inches below average.

#### BRIGHT SUNSHINE.

Bright sunshine exceeded the mean amount from Vancouver Island to Manitoba both inclusive, and a deficiency was recorded over the remaining portion of the Dominion; the percentage of the possible duration ranged from 62 in Victoria, B.C., 60 at Battleford and 53 at Winnipeg to between 33 and 42 in Ontario and to between 43 and 48 in Quebec and the Maritime Provinces.

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE BOMINION OF CANADA, SEPTEMBER, 1899.

"Barometer not reduced to Sea Leved." Stations not furnished with Registering Thermometers.

Siliani	Zic of Auroras, 20 of Third st. 20. 20 to boxs.	200 / 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
1	Davewith Olor So. of Fair dav	ଗଳିଖ ଓ ଅନ୍ତର୍ଶ ପ୍ରଥ ଖର ଖରଥି <mark>ରଥିର ଅଧିକ ଖରଣ ନଥ ଥ</mark> ଖରଣ ଜଣ୍ଡ ଓ ଜନ୍ମ ପ୍ରଥ ଜନ ସମ୍ୟୁକ୍ତ ଜନର ଅନ୍ତର <u>ଜଣ ଓ ଅ</u> ଧିକ ଅଧିକ	
1 .	upaou at	- NES R RUN 48 R RA PRESENT ASS REFE : RE R 1 8 8 8	8484853 48399
LATIO	тол Ателяве. Пиј 1-эгтечН		8584984 8588 500000 8000
Precipitation	- Difference	- 항조전 20 이용의 판단 & 공포 6공연공항은 호형적 경공과 (200 관 / webs) - [	2522232322222 55242222222222222222222222
	-Jinounk	Tage in loss have the superior the large loss to be the	H-2000H -0000
WIND	-ib bus staff mort noiteer	212 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	25: 25: 25: 25: 25: 25: 25: 25: 25: 25:
VELOCITY OF	Highest day's	x ⊃ ≥ 10	12 52 22 22 25 25 25 25 25 25 25 25 25 25
VELO	Mean miles   per hour.	7 - 1 - 1 - 1 - 1 - 2	x 11-
	Total number of hours.	දීමයි 7 කි.මි. සි. : . සිහි : කි.මේකි : කි.මේකි	និះ . និនិត្តនិនិន្ទិតិទ
	c.	880 8 5 8 4 6 6 6 1 6 8 6 6 6 6 6 6 6 6 6 6 6 6 6 6	1113 × 27.4 × - 8 : 18
РВОМ	'M 'N		000000000000000000000000000000000000000
WIND P	W.	중4 = 2 · 이 · 4 · · · · · · · · · · · · · · · ·	12 12 12 13 13 13 13 13 13 13 13 13 13 13 13 13
*	S. W,		ට්සහිතයක්සියය : මි ලෙසහිට්සෙන්සියය : මි
DIRECTION OF	.8.	= 7 ° ° . ge= ;0 ;g ;e ::g :::::-g ::::::::::::::::::::::::::	1.572.0588.0.4 : 24 : 12 :
IRRCI	E. E.		0.440 x01010240 : 0
a a	N. E.	(E) 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	OHEN-14-0
	'N	E8	1000 00 00 00 00 00 00 00 00 00 00 00 00
-aidm	Zo, of days co	971 - 7 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	-TE-10.3 (* : : : :
1	Mean amount of	जिल्हा : (a . : ' कि : : कि : : : : : : : : : : : : : : :	သိတ္တော့မှလ်တို့မှာ က
ույ	Mean relative	\$ : \$ :	x 40.00
to 918	Мени (сигретан Лемројиг		
	Meau daily	1136 / 1137 / 11	88888888888888888888888888888888888888
	Date.		28272222222222
. H	Lowest.	· · · · · · · · · · · · · · · · · · ·	8864886888888
RAT	flate.		ผลละสสสสสสสสส
TEMPERATURE	Years observe.	# 1 등 전 1 등 1 등 1 등 1 등 1 등 1 등 1 등 1 등 1	25252488846446 %12831285425888
-	110m average.	CODE D SUID SON SON SENDENHE SON FROM FINE THE SON SON FI	**************************************
	Piffrence	242 4 (21-01-01-01-0-40) 450 XIN 400 HED (60 0 - 1-60)	+++++++ +
-=	Мевп.	* 636   63 5 63   63 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	\$ 25 25 25 25 25 25 25 25 25 25 25 25 25
	Тяпде.	13 (1 (8 (1) (1 (8 (1) (1 (8 (1) (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1	28 28 28 28 28 28 28 28 28 28 28 28 28 2
Parssur.	Lowest.	- Bagar 1 (a) 1 1 (a) 1 1 2 1 1 1 1 1 1 1 2 2 2 1 1 1 1 1 1	อลลลลลล ล
PRES	Highest.	트용용 : '용 : : : 용 : '통 : : : : ' 공용 : : : : : : : : : : : : : : : : : :	88888888 8844888
Ì	Менн теншеей.	98 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	8888688 15 :
вэЗ э	Elevation above Level, in feet.	45 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	25 25 25 25 25 25 25 25 25 25 25 25 25 2
1	.W ebuigade W.	<ul> <li>- Baasaaniaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa</li></ul>	985252886524688 9852448886544888
	.N obnitial	- 574738677448656582828282875756748472847464664458 - 488455445546668888888888888888888888888	88888888888888888888888888888888888888
	STATION.	Register Collemns  Barkerille  Absorber  Absorber  Absorber  Absorber  Absorber  Bereislose  Bereislos	N. W. Transpoures Medicine H141 Edinorion Poly Appelle Out Appelle Out Appelle Prince A Bert Callery Callery Callery Callery Callery Callery Callery Callery Callery
		※アカイトの出出出した日本ではなりでするのがある。	, za sociă ă ă d d d d d d d d d d d d d d d d d

		- 00 0000 mod0menon
888 5 84 88487 8 8	528 888 555 55	######################################
888 5 84 88485 8 8 888 5 84 88485 8 8	65.8 888 299 299 24	H 6565 625576 255 55995665576 2545 59 - x x x x x x x x x x x x x x x x x x x
<sup>™</sup> 2882 12 22 22 282 12 12 12 12 13 13 13 13 13 13 13 13 13 13 13 13 13	두년명 : [육왕홍 [월주홍 ] 병유	님 교육수업 동안왕남중국가원하다 유한남성골경공설강의 당시되어 항공
255 St. 18 SE		= E 2988 SERESERI   PERSERI   500
.Eggs	77 <b>: 19</b> 77 : 772 : 1	6 3048 eddatiles justitue des
. न्या के स्थापन के किया है जिल्ला अस्ति के समाज्या के लिए के समाज्या	252 : 255 X 25 1:51 00- 0-1 00	වුරු නුම්වන් ඉහිනිම්වන්න්ව ද ස්වයිලීම්පීන්න්ත් කිම්බාබ හි ලද සංසාව සාදායන් සාදායන් සහසාව සාදායන්ව සාදාය
	* * * * * * * * * * * * * * * * * * *	
13 Nw	N S S S S S S S S S S S S S S S S S S S	# 1
9	다. 사람 트를 보 <mark>고</mark>	F 1 1 2 2 2 1 2 1 2 2 1 2 2 2 1 2 2 2 2
10		#
888.7 88 88 8 8	58 : : : : : : : : : : : : : : : : : : :	සි : මිසිසිසි : බුබුබුබුසිනිසිසි : : බඩ : සි : : මිවෙල : : මි
		च सन्तर्भ शुह्रहरूवविकास हिला कि स्वाहरू स्वाहरू स्वाहरू स्वाहरू स्वाहरू स्वाहरू स्वाहरू स्वाहरू स्वाहरू स्वाहर स्वाहरू स्वाहरू स्वाहर
1850-150 50 1 0	29 . #\$5 EE 15	5 xeec (2555255)
	7.6 11.000g 10g 1.g	
<u>∞+1-0 (001)</u>	es : : 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- 6 (4=10) 영국회원회에남자 (1일(4) 및 1개최수 (1일 12 12 12 12 12 12 12 12 12 12 12 12 12
- mooo : :010 : : : : : : : : : : : : : : : :		
6 8 x 5   10 - 1   1-9   10 0		= 1-60= 교육한경이라는 : 1-호 : M 2001 : 호 : :
	2 0 1 0 0 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩		
m==== ================================		
	25 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	音 [T音中音 ]書書登程字中下台 [ ] [ [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
: [ ] : : [ ] [ ] [ ] : "		7 : : : : : : : : : : : : : : : : : : :
	C.C. W. W. W. W. W. W.	χ :
111111111111111111111111111111111111111	82 11 11 11 11 11 11 11 11 11 11 11 11 11	
	/ #1-   C=C   1-110 C x x	T : -
	មនុស្ស នៃស្នង និងស្និតិស មនុស្ស និងស្និតិស្នងស្នង	2 5 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6
	TAGO (094 (060000)	
8-888 88 -PERS 822		or openial maintenantials and insperior to the property of the
0		in the second of the second of the second second is a second seco
34000 01 4-111 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		· 프로프의 프로웨이터워트웨트 트립트웨드리트웨덴 프로프의 유행
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2 3 H W H H H 2 W W S   1	ಈ ಗಣಕಾರಣ ಕಾಯವಾರ್ವಾಯಗಳು ಕಾಯವಾರ್ಣವಾಗು ಮಾಡು ಕಾರಣ ೨೬ ಅಥಾರಣ ದುನ್ನುವರ್ಣಯಗಳು ಮುಖ್ಯ ಬ್ರಾಂಡಿಗಳು ಮಾಡು ಕಾರಣ
+   + +		က နာတ်တွင် နာတာေတြနည္နည္နည္း ျပည္သည္။ ကို သင္းသည္။ ကို သည္သည္။ မြန္မာျပည္သည့္ မြန္မာျပည္မွာ မြန္မာျပည္သည့္ မြန္မာျပည္မွာ မြန္မာျပည္သည့္ မြန္မာျပည္သည့္ မြန္မာျပည္သည့္ မြန္မာျပည္မွာ မြန္မမွာ မြန္မမွာ မြန္မာျပည္မွာ မြန္မာျပည္မွာ မြန္မာျပည္မွာ မြန္မမွာ မြန္မမွာ မြန္မာျပည္မွာ မြန္မာျပည္မွာ မြန္မမွာ မြန္မမွာ မြန္မာျပည္မွာ မြန္မာျပည္မွာ မြန္မမွာ မြန္မမွာ မြန္မာျပည္မွာ မြန္မာျပည္မွာ မြန္မမွာ မြန္မ
· 887988   88   487834   844	5288 1888 84588	8   1444   1446   1466   1666
u i i i i i i i i i i i i i i i i i i i	25.6	8 : : : : : : : : : : : : : : : : : : :
[] : . : [ . : ] : : : : : : : : : : : : : : : : :	조육육 : : : : : : : : : : : : :	등 1 : : : : : : : : : : : : : : : : : :
- <del>1</del> :	원원 <b>왕 : : : : : : : : : : : : : : : : : : :</b>	_ 현 : : : : : : : : : : : : : : : : : :
	- 534	
	884 86	용 : : : : : : : : : : : : : : : : : : :
1957	를 보고 158명 : 15명명 : 15명명	8 E : 8 E E : 8 E E E : 8 E E E : 8
- Englingschattener (Se. 12 - Englingschattener (Se. 12	4-855-6355-4455-455-455-455-455-455-455-455-455	86884282223885522232485638585858585858
999955955555 55 .2	88888888888888888888888888888888888888	社会的公司的公司的公司的公司的公司的公司的公司的公司的公司的公司的公司的公司的公司的
\$ 25 35 35 35 35 35 35 35 35 35 35 35 35 35	2444446888884444 2848482888888444	THE RESIDENCE OF THE PROPERTY
N. W. Terratronies.—Con. (c) Cumbalation (c) Marched (c) Marched (c) Marchill (c) M	M. NATRONA Manuelesa, M. Tantine (A. Wenne) A. A. Alban's (A. Wenne) Fort do borro Portage in Pratrie Portage in Pratrie Portage in Pratrie Portage in Pratrie Elemento Indiana Manuel Island Manuel Manuel Island Manuel Manuel Manuel Manuel Manuel Manuel Manuel Manuel Manuel Professione Professione Professione Professione	Davague :  Buildes buy seather :  Swalmer :  Commerce :  Swalmer :  Swalme
	a i i i i i i i i i i i i i i i i i i i	the search of th
Ma. Ma. Ma. Jung 200	(Aw Drai and ntail	
Harring Color of Colo	Segretaria de la constanta de constanta de la	bhrry  bhrry  bhrry  Bay  Bay  Bay  Bay  Bay  Bay  Bay
in TEI lian lian lian lian lian lian lian lian	AMAIDMAN MINIMES AND MINIMES A	Synthesis (Synthesis (
Pagagagagagagagagagagagagagagagagagagag	Man A Man	Northern Strain
_		9

OOM8100000010 00000010000

mccnc-co-ceccc-c-cocc

21==-n55n=+0++00nnnn01==0

Zor of Fogs.

Smrots .bandT to .o.V.

THE DOMINION OF CANADA, SEPTEMBER, 1899. AT STATIONS IN WIND AND PRECIPITATION PRESSURE, TEMPERATURE,

-0 000-000000000 SETOTUA TO JON BT교육대학문학() 11 3 5 5 E S 期間 55554781-83 55554781-83 step aind to ov 9191 Stom to 10' dilw sted 11.1 10.1 95 288 288 488 2882 Heaviest full dimension PRECIPITATION 22.22 тош Алегияе. 995003903550939097777 9 = ----900 7799-79399 Difference <sub>.</sub>ខខខងដ្ឋមន្ត្រីនទ 医尼思斯斯克尔斯勒 999864588EEEEEEEE 27 8223 :252 es e -ib bere stad di-mort noiteer VELOCITY OF WINE 800 30.5 Highest day's velocity. > 7 8 23 : : :Ξ Ξ E:-1-x solim mesk nuod roq 5 E : = E \_ sanou to .8.83 Lotal number Stations not furnished with Registering Thermometers \$0100188300H+ . 97 FROM Z. W. Δ Wind : 25 At 'S 9 DIRECTION 192 2' E Ε. Z' E Xo. of day completely chudeds. Mean amount of Tibim Tibim evitaler 8 97557758 255555 25555 4300G 55 Z5 8 885 :992888888 8.8 :8933 .918( #600000000 not reduced to Sea Level ត្តអត្តសម្ពេចស្ត្រាស់ ស្ត្រាស់ 85 (858) SSA 84484855588 65855555558 Lowest. TRMFERATURE. THE STREET EE = = Highest. 97 2282 488 884 12821228822 8223 854888444 Years observe. 1-75 .... × 0 × 0 1111 tom average. Difference 111 111 12693 :258 55555575555 avəK \$22222225555555555522225555565 58 a. Barometer 8117 988 488 688 Kange. 3 0 9 90.00 0.62.66 PRESSURE. Highest. 833 99 558 888 30.05 96 8 .6 ŝ 858 : \$ 21 8 18 Elevation above Sea 595 55 4ลิยต์= ° ลิจิตสิลิ 17 6 2×22023422 그리우롱음악의의하당 .W abutigaa.I 88888377443 ₹2 72 8454888685 'N applicat 92 Ginvenburst
Ginvenburst
Ginvenburst
Birman
Birman
Bondon
Port Smiley
Vondsdrock
Port Towner
Port Hope
Po Chattana Dathonsio Milis Medical Cristical Cristical District Rock Ilia Pertage Montreal Montreal Richmond From Point des Monts Proint des Monts Cheece Proint des Monts Cheece Proint des Monts Cheece Religious Chatte Cheece Martine Chatte Windsor Alton aduabh North Bruce. Collingwood. Calvin. Otonabee.... Orillia Coldwater..... Beatrice..... STATION Bornor. Whiteside... Sprucedale.

	100
<b>4 ಕಟ್ಟು ಬರ್ಗಿಕ್ಕಾರ್</b> ವರ್ಣ	2 0x0 000 ; 00x 0x0 0x0
	20H-2 62- 42- 20H - 4
8 28 22 2448 464 8	AARS ASS SES ASS RES TE
	Hanne was xxs Hes Exe E
22444844848484	######################################
90 1919 - 429 - 252-752-978-98-9	92272 927 927 927 927 92 828 828 828 828 828 8
A na na na na-na-n	ಬಿಕ್ಕಾಗಿಕ   ಬಾರ್ಚಿ   ಹಾಗು ಬಿಕ್ಕು   ∞ ಬಿಕ್ಕಾಗಿಕ   ಬಿಕ್ಕಾಗಿಕ   ಡಾರ್ಡಿ ಬರ್ಗಾ   ಹ
**************************************	NAME IN THE STREET OF THE STRE
E 1-02-24 W N N N N N N N N N N N N N N N N N N N	1-1-101-0 N N N N N N N N N N N N N N N N N N N
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	: : : : : : : : : : : : : : : : : : :
	474. IN II
B	i-e=∞= i g i i- g
8: : 55,45,58 884 884 88; 8:	ក្នុងស្ថាស់ និងន ក្រុំ : : ក្រុំ ភាសា ខ្លួន : : ន
o ro oso gárosta e	हुस्मत्म केत्र है । है व ब्वर्ट है है
E 60 840 0E457:: :-	88 8 × 22 × 22 × 12 × 12 × 12 × 12 × 12
2   X = X = X   R   R = R = R   R   R   R   R   R   R	등록보호주 [127] 원 : : : : : : : : : : : : : : : : : :
1 : : : : : : : : : : : : : : : : : : :	
	200 E 200 C
	A REAL PROPERTY OF THE PROPERT
	- X 3 2 0 0 0 2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
a 27 250 50822 : 0	
© 1-21€10-4-4	x <del>_</del> 1
**************************************	6- 6- 6- 6- 6- 6- 6- 6- 6- 6- 6- 6- 6- 6
\$ Z \$	28 7
21 21	
	വിവരുന്നു. വിവരം വരുന്നു. വിവരം
* ::::::::::::::::::::::::::::::::::::	EXSEC P:: 0FE: 8E6 EE:: 0
ន និង និង កង្គង់និងកង្គង់ 	តិតិតិតិត (*a° តិតិតិ   តិតិតិ   គិតិក     2   ২০০1-1   ১০০   ০০০   ০০০   ০০০   ০০০
• 4 88 588 885588888888	28888 <b>4</b> 48 468 888 884 6
대 에 에는 : 하는 도 조조 m 도로의 조조 조	<u> 25082 404 404: XXX 440: 0</u>
15 m ≠ 111 85m26F	9 1 650 188 1884 1888 1888 1888 1888 1888 1888
* 0 00	# # # # # # # # # # # # # # # # # # #
1:1+ 1 +-11111	
• <del>9</del> 45 858 88888888	98888 858 858 858 570 970 9
# : : : : : : : : : : : : : : : : : : :	7527
	sees iliittije titlija liliet ili oo t
<u>-= + + + + + + + + + + + + + + + + + + +</u>	ana a i i i i a i i a i i a i i a i i a i i a i i a i i a i i i a i a i i i a i a i i i a i a i i i a i a i i i
	7277 :
2 1 1 1 1 1 1 2 2 2 2	\$ \$ \$ \$ \$
	8888
- 2323144221 : 8542719244 - 2232222 : 85422325	28222222222222222222222222222222222222
• ####################################	9626896665656565656666666666666666666666
* # # # # # # # # # # # # # # # # # # #	Application
Continued Contin	Hattan  Valuey  Variane  Dictor  Dictor  One of the control of the
	18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
W. I. S.	
A Section of the sect	tribulant in the state of the s
OURBEACH Continued) Conditions of the Authors of th	Hallax  Yalloy  Yalloy  Yalloy  Didy  Didy  Philoy  Whitehead  Philoy  Whitehead  Philoy  Whitehead  Philoy  Whitehead  Philoy  Whitehead  Whitehead  Walthin  Walthi
QUERRY—(Continued Control of Cont	Haltan Yaman Yaman Perta Digita Digita Window Windo
= 4 2	<u>a</u> 2, 2 <u>a</u>

# PRECIPITATION AT STATIONS REPORTING RAIN, WEATHER, &c., DURING SEPTEMRER, 1899.

		1	CAINTAL	1							
STATIONS.	Amount in inches.	Days of or Over,	No. of Fair Days.	Heaviest Fall in Month.	Date.	THENDER AND LIGHTNING.	Remarks.				
Burrish Coleman Comberland. Albern Goldstream Langley Royal Oak Nanaimo	1 81 2 44 1 22 1 48 0 95 1 17	5 9 5 6 4 4	25 21 26 6 26 26	1 02 1 07 0 56 0 53 0 65 0 70	3 4 30 29 29 4 5		28th, Frost; 30th a little snow on nountains. Fog on 10 days.				
Stirling	2 86 1 76 0 29 0 93 1 27 4 74 2 56	5 4 9 5 5 4	26 28 26 21 25 25 26	2 13 0 99 0 07 0 39 0 75 1 50 1 69	13 5 6 4 5 3 22	11. 27. 12.	26th, Wind storm, 28th, Frost, Fog on 3 days; frost 15, 23, 17th, Frost, 29th, Frost,				
Manifora Clear Spring, Rapid City	0 1 17 1 18	6	23 28	$\frac{0.67}{0.73}$	1 1	1, 2, 4.	Snow on 27th.				
Shoal Lake Norquay .	0 40	1	29 25 26	0.40	4 4 6	4.	12th, Frost. 28th, Snow.				
Greenwood Rosebank Cartwright.	1 54 0 38 0 71	4 4 3	26 27	0 79 0 17 0 55	27 3	3.	28th, Snow.				
Harrney. Pendana Crossing Behmat Eggu Oakbank Sakirk Morebu Beaver Creek Tartle Mountaun.	0 80 1 24 1 37 0 48 1 07 0 84 0 90 0 47 0 50	9 5 4 5 6 5 2 9 4	ត់តត់នាត់នាងនាន់ ទ	0 55 0 65 0 13 0 40 0 46 0 41 0 90 0 47 0 45	4 4 14 14 3 3 3 4 14	1, 3, 9, 27, 3, 4, 9, 15, 27, 3, 4, 9, 15, 27, 3, 4. 3,	29th, Temp. 15', 27th, Snow. 11th, Frost. 27th, Snow. 13th, Frost; 27th snow. 21st, 28th Frost. 18th, Frost.				
Cartwright (1) . Ontario -	0 35 2 08	1 5	25 25	0.35	3		30th. Frost,				
Watford Wyoming Deer Park Searbore Georgetown Aurora Orangeville Warton Lion's Head Providence Bay Huntsville Emskale Nottawasaga Island Uxbridge Wallond	9.85 9.85 1.70 1.85 1.10 1.85 1.10 1.85 1.10 1.85 1.10 1.85	6 8 10 5 9 5 7 7 10 11 11 10 8 7 6 12 8 15 9 8 3 10	20 20 25 26 27 27 27 27 27 27 27 27 27 27 27 27 27	0 75 1 040 0 680 1 000 0 87 0 682 2 70 1 51 3 658 1 20 2 00 2 10 1 12 1 12 1 12 1 12 1 12	26 25 7 24 24 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18, 5, 24, 5, 24, 1, 5, 24, 1, 7, 24, 1, 4, 5, 7, 17, 18, 24, 5, 7, 17, 24, 5, 7, 24, 5, 7, 24, 5, 7, 24, 5, 7, 24, 5, 7, 24, 5, 7, 12, 12, 18, 24, 17, 17, 24, 5, 7, 12, 18, 24, 17, 17, 24, 5, 7, 12, 18, 18, 18, 18, 18, 18, 18, 18, 18, 18	30th, Snow. 23th, ice; 30th, hinsnow 23th, ice; 30th, frost; ice, 30th, 30th, 4 in, of snow. 23rd, Ice. 14th, Ice, 30th, snow. 22nd, Severe frost. 30th, Snow. 22nd, Frost; 50th snow. 29th, 2 in, snow. On 30th, 14th, 15th, 23rd frost, 1½ 17th, Heavy had storm. 13th, Ice; 30th, snow. 13th, Hallstorm: 30th 14th, Frost. [snow.				
Jermyn Lynedoch Emismore, Cherry Valley Glen Elm Elgin Reblin's Mills	4 66 3 94 3 41 4 57 4 40	8 6 8 14 10 9	24 24 22 16 20 21	0 97 1 50 0 65 0 82 1 53 1 45	1 26 1 26 27 26	7.	Sleet on 26th. storm. 6th, Frost; 30th, hail- 26th, Heavy storm from N.				
Roblin's Mills Ursa. Wooler Croydon Parma.	4 25 6 80 3 47 3 65 4 50	17 11 6	13 19 24 19	2 04 1 41 1 10 1 05	26 20 21	7, 24. 11.	26th, Snowstorm broke 14th, Frost, [fruit trees.				
Oliver's Ferry	6 31 3 14 3 66 1 28 3 77	. 11 15 5 6	19 15 25 24	1 75 0 60 1 45 0 55	26 27 26 26	8, 13, 18, 26, 7, 12,	7th, Frost; 23rd, ice, 22nd, Heavy frost; 30th snow,				
Sparrow Lake	3 77 3 42	9 10	19 19	1 30 1 10	24 26	7. 7, 12, 17, 24.	15th, Heavy frost.				
New Brenswick Point Escumings Nova Scotta -	1.77	8	22	1.36	21	14.					
Port Morien P. E. Island	7 55 4 46	13 5	17 25	3 00 2 54	30 20 21		6th, Heavy N. W. gale.				
Murray River Mount Stewart.	3 31	3	27	0 62	30						

#### Thunder reported on-

- 1. Barnardo, Stratford, Port Stanley, Toronto, Birnam, Port Hope, Brantford, Bermuda, Stouffynle, Welland, Scarboro, Georgetown, Clear Spring, Swift Current, Medicine Hat, Alton.
  - 2. Stony Mountain, Halleybury, Clear Spring, White River, Port Arthur.
- Turtle Mountain, Barnardo, Grand Manan, Quebec, Father Point, Treherne, Rosebank, Portage la Prairie, Cannington Manor, Brome, Cartwright, Pembina Crossing, Belmont, Selkirk, Minnedosa, Perce, Bermuda, Qu'Appede.
- 4. Wolfville heavy, Meaford, Stony Mountain, Grand Manan, St. John, Brandon, Treherne, Rosebank, Hamilton, P.E.I., Cockburn 1s, and, Clear Spring, Norquay, Belmont, Yarmouth, Winnipeg, White River, Bermuda, Truro.
- 5. Meaford, Uplands, Owen Sound, Moose Jaw, Collingwood, N. Sister Rock, Barnardo, Durham, Stratford, Coldwater, Port Stanley, Parry Sound, Birnam, Point Clark, Erasmus, Sprucedale, Agincourt, Port Dover, Brantford, Lucknow, Paris, Sponfyille Providence Bay, Emsdale, Midland, Jermyn, Ridgetown, Dutton, Wilton Grove, Wyoming, Georgetown, Wiarton, Lion's Head, Alton, Conestono.
  - 6. N. Sister Rock, Stony Mountain, Treherne, Rosebank, Whiteside, Knee Hill.
- 7. Meaford, Owen Sound, Durham, Stratford, London, Coldwater, Port Stanley, Toronto, Saugeen, Birnam, Point Clark, Erasmus, Cockburn Island, Hamilton, Ont., Gosfield, Beatrice, Stony Creek, Agincourt, Port Dover, Lucknow, Paris, Providence Bay, Midland, Jermyn, Cherry Valley, Wooler, Lunsdowne, Stoutlythe, Otonabee, Ridgetown, Scarboro, Georgetown, Wiarton, Lion's Head, N. William-burg, Sparrow Lake, Guelph.
  - 8. Port Stanley, Port Dover, Wyoming, Arden, Conestogo.
  - 10. Donald.
  - 11. Toronto, Agincourt, Calvin, Stouffville.
- 12. Montreal, N. Nicomen, Griffin Lake, Uplands, Nelson, Chilliwack, Gravenhurst, Lindsay, Coldwater, Red Deer, Calgary, Tobacco Piains, Sprucedale, Whiteside, Otonabee, W. Beaver Hills, Jermyn, Croydon, Landsdowne, Sparrow Lake, Bancroft, Banff, White River, Kamloops, St. Agathe Knee Hill.
- 13, Fredericton, Sable Island, Hillview, Pipestone, Cannington Manor, Sable Island, Sunshine, Arden, Edmonton, Regina.
  - 14. Point Escuminac, Bermuda.
- 7 . 16. Haileybury, Red Deer, Cockburn Island. Knee Hill.
- 17. Meaford, Collingwood, Gravenhurst, Lindsay, Quebec, Coldwater, Toronto, Point Clark, Erasmus, Beatrice, Agincourt, Whiteside, Haliburton, Otonabee, Georgetown, Midland, Swift Current, Bancroft, Guelph, St. Agathe, Aiton, Conestogo.
- 18. Uplands, Gravenhurst, Ottawa, Gosfield, Beatrice, Port Dover, Whiteside, Haliburton, Calvin, Emsdale, Jermyn, Arden.
  - 19. Port Dover.
  - 21. Cockburn Island, Barkerville.
  - 22. Masset.
- 24. Collingwood, Stratford, Gravenhurst, London, Port Stanley, Toronto, Birnam, Point Clark, Erasmus, Hamilton, Ont., Gosfield, Agincourt, Port Dover, Brantford, Lucknow, Haliburton, Ctonabee, Ridgetown Dutton, Wilton Grove, Wyoming, Guelph, Scarboro, Lion's Head, Emsdale, Midland, Wooler, Sparrow Lake, Bancoft,
  - 25. Port Stanley, Ridgetown, Alton, Conestogo.
  - 26. Crane Lake, Duck Lake, Arden, Regina.
  - 27, Rosebank, Pembina Crossing, Belmont.
  - 28. Scarboro.
  - 29. N. Nicomen, Banff, Victoria.

#### Aurora Recorded :-

Where the class of aurora is noted by the observer, it is given, (I) being the brighest. (IV) the feeblest in brilliancy.

- 1. Hailybury, IV; Hillview, III; Pembina Crossing, III; Truro, IV; Cape Norman, I.
- 2. Hillview, IV; St. Albans, III; Red Deer, IV; Cannington Manor, IV; Muskowpetung, II; Truro, IV.
- 3. Hillview, IV; Tagish, II; Prince Albert, III.
- 4. Pembina Crossing IV
- 7. Cannington Manor, IV.
- 8. Qu'Appelle, IV.
- 9. Meaford, IV; Haileybury, IV; Quebec, III; St. Albans, III; Red Deer, IV; Lucknow, Georgetown, IV; Pembina Crossing, III; St. Agathe, II; Truro, IV.
- 10. Barnardo, III; Hillview, II; Tagish, III; Calgary, IV; Rat Portage, Pembina Crossing, IV; Calgary, II; Sydney, IV.

- 11. Hillview, H; W. Beaver Hllls, IV; Pembina Crossing, IV; Prince Albert, I.
- 12. Barnardo, IV; Hillview, IV; St. Albans, IV; Georgetown, IV; Pembina Crossing, IV.
- 15. W. Beaver Hills, IV.
- 16. Red Deer, IV.
- 17. Tagish, II.
- 18. Harleybury, 111.
- 24. Barnardo, IV.
- 25. Haileybury, 111; Grand Manan, IV; Hillview, IV; St. Albans, Cockburn Island, Savanne, W. Beaver Hills, IH; Pembina Crossing, IV; Minnedosa, IV; Yarmouth, IV; Regina, II; Qu'Appelle, III; Medicine Hat, IV; Truro, III.
- 26, Moose Jaw, Meaford, III: Haileybury, III: Durham, IV; Coldwater, I: Hillview, III; Cape Magdalen, Cottam, Savanne, Rat Portage, Georgetown, IV; Pembina Crossing, IV; Minnedosa, III; White River, II; Qu'Appelle, IV; Medicine Hat, III; Cape Norman, III.
- 27. Hillview, IV; St. Albans, HI; Tagish, IV; Red Deer, IV; W. Beaver Hills, IV; White River, III; Qu'Appelle, IV.
- 28. Moose Jaw, Chicoutimi, St. Albans IV; Cape Magdalen, W. Beaver Hills, III; Pembina Crossing, IV; Prince Albert, I; Oonikup.
- 29. Meaford, IV; Barnardo, II; Gravenhurst, IV; Hillview, HI; Channel Island, St. Albans, HI; Portage la Prairie, Rat Portage, Georgetown, IV; Pembina Crossing, HI; Prince Albert, II; Minnedosa, HI; Battleford, HI; Cape Norman, II; Oonikup.
  - 30. Father Point, III; St. Albans, IV; Battleford, III.

## ABSTRACT OF OBSERVATIONS AT BELLE ISLE. OCTOBER, 1898, TO SEPTEMBER, 1899, INCLUSIVE.

Morro	BAROMFIER AT SEA LEVEL					Temitrature.								
Months.	Mean.	Max.	Min.	9 a m.	4 p.m.	9 p.m		Mean Min.	Mean Daily Range	High		Mthly Mean.		
	10	111.	ın,											
October, 1898	29, 914	30-29	29-61	36-9	38-1	36.5	10.3	31.0	6.3	45 0	25 0	37 3		
November	30 012	30.58	20-29	29.5	31.0	29.5	33.0	26.5	6.5	45-0	10.0	29 S		
December	29 637	30-24	28 98	20/2	20-1	18-4	22.7	15.7	7.0	54.0	2.0	19.2		
January, 1899	29,772	30 40	28/51	2.5	5.0	1.2	7.9	0.4	8.3	55.0	22 0	7.4		
February	29 675	30-13	28-66	4.5	7.6	6.4	9.4	2.6	6.8	$3 \times 0$	21 0	6:0		
March	30 094	30,52	29 .38	17.7	19/2	17 4	22.4	13 6	5.8	$37^{\circ} - \Theta$	17 0	15.0		
$\Lambda  m pril$ .	, 30 119	30-66	29 - 42	31-3	33.2	30.6	35.3	28.0	7.3	42.0	13 0	31.7		
May	30 000	30,53	29.72	35.7	36-6	34.0	38.5	30.6	7.9	52.0	20-0	34-6		
June	30-109	30.52	29 41	40.8	42/6	39.2	5.0	37.1	7.9	57.0	30.0	41 0		
July	30 163	30-55	29 83	48-1	49.5	\$7. D	52.1	44.9	7 2	59.0	34-0	18/5		
August	30-163	30.52	29.79	58.8	54-6	52.9	57 8	51.2	616	64-0	43.0	51.5		
September a 2 2	29 974	30 47	29 20	51/3	52/4	50.7	55 I	49.7	5.7	59.0	45 0	52.5		

# ABSTRACT OF OBSERVATIONS AT BELLE ISLE. OCTOBER, 1898, TO SEPTEMBER, 1899, INCLUSIVE.

			No. of Winds from						VELOCITY IN MILES.			Fan.	Rain.		of Snow.	46	Auroras.	
Months.	×	Ν. Ξ.	<u></u>	<u>x</u>	T.	S. W.	 	N.W.	Calm.	Mean.	Most Windy Day.	Direction from	Clouded Sky N	Vant.		Division	No. of Pogs	No. of
										mls.	mls.			Iti.				
October, 1898 .	ĩ	19	7	3	1	20	18	18.,	60	26.8	54 0	S.W.	70	: 7-01	10.1	6	11	1
November a	5	15	6	10	6	11	19	18	0	19.7	38-8	N.E.	70	15.96	12	6	16	:
December	16	7	7	ŧ.,	1	15	34	9	0	26.5	60 S	N.E.	63	0.08	2	13	()	
January, 1899	1 ‡	8	-1	8	4	10	18	27	0	30-0	67. 9	N.W.	59	0.68	1	14	1	
February	16	15	9	1	0	51	21	10 .	0	28 4	67/1	S. W.	71	0.00	4)	16	1	
March	12	25	3	5	2	$_{\rm s}$	17	21	0	18 6	55.0	N.E	6]	G + G	2	14	i	
April	11	24	13	16	õ	23	12	5	0	17/0	32.5	NE	79	3 00	8	9	$_{\rm S}$	
Мау	2	35	9	11	5	6	16	9	0	28 7	67 - 9	N.E	69	6.20	10	1	ĩ	
lune	5	12	27	4	2	23	31	6	0	12 1	27/9	W.	ъs	1.19	9	Q	11	
fuly "	1	18	13	16	12	8	16	8	1	13 3	52 9	N. E	78	5 19	12	O	14	
August	9	9.1	0	20	1	17	23	4	0	12/5	25.0	N.	68	3.70	8	0	16	,
September a	2	12	ļ	7	6	27	24	8	()	15/2	32.9	W	61	3 08	6	0	9	

PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF SEPTEMBER, 1889.

							11-	cus I	Expix	G.						
	-	= = = = = = = = = = = = = = = = = = = =	- 1	Ē	9 J. H.	10 в т.	11 .4 11	Neg.	=======================================	- 15 Iv m:	a betai	4 p.m.	5 jeun.	6 p.m.	7 p.m.	brur.
		41 1111		0.59						11.51	0.51	/\ =u	0.00	0.40	0.00	
				0.20												
K r Island Agree															0.00.	
Bartleford															0.00	
Indian Head															0.00	
Brandon															0 00	
															0.00	
Winnipeg. Diahan															0.02	
Windstonk.															0 01	
Teronto .															0.00	
Lindsay.															0.08	
Barne .															0.00	
Kingston .															0.00	
															0.00	
Ottawa .															0.00	
Montreal = -															9 00	
1 te perieton ×		0 20	11 ,111	11.12	17 ,2,1	0 ,10	U 15-1	0 66	11 00	0.05	0 10	0/ 1)	17 247	- 13	- 181	
	Vie torna.	Kuper Island.	VEASSIZ.	Batth ford.	Indom Head.	Banda.	Wnampeg.	Purham.	Woodstock.	Toronto.	Lindsav.	. Barrie,	Kingston.	Ottawa.	Montreal.	Fredericton.
Mean proportion for month (Constant sombine Georg L.)				,				0.38					0 41		0.43	0 48
Difference from average		- 20		- 13				0.50								
Maximum daily amount	. 0 00	17 (10)	0.72	07.171	99				11		0 38	9	15	15	, 0-97 9.	28
Date	1 .	1.1	25	20	20	21	25 0	15	6	15 6	-	5	8	10 8		3
No. of days completely clouded	. 1	0	6	1	1	3	+11	8	1,	6		1)			4	3

### FORECASTS FOR SEPTEMBER, 1899.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions is ued during the month was 958. These were divided as follows .—

			Vern	TF1).	
District	No. Issued	No. Fully	No. Partly	No. Not	Percentage
	57	73	9	5	89-1
fanitoba	111	79	23	9	81 5
ake Superior	119	79	20	20	74.8
ower Lake Region	119	79	25	. 15	7619
Georgian Bay	103	70	21	12	78-2
Ottawa Valley	103	75	18	10	81 6
Jpper St. Lawrence	99	1 76	15	×	84-3
Lower St. Lawrence	105	79	. 15	11	82.4
Gulf Maritime Provinces	112	78	21	13	79 0
Total	958	G88	167	103	8015

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,

Director.

Meteorological Office, Toronto, 26th October, 1899.



### METEOROLOGICAL SERVICE DOMINION OF CANADA

# Monthly downthur.

VOL. XXIII

OCTOBER, 1899.

No. 10

#### INTRODUCTION

In compiling the prereceived at this office for t storm signal agents. Fact

Those of weather forecasting, that epide by the authors volunt et observers and interial us of initiating the rather of locals of might and low pressure in the United States, we are indebted to the Chief of the Weather Biners, Washington, D.C.

#### REMARKS UPON THE WEATHER.

The most distinctive feature in the weather conditions of Canada in O tober was the low temperature over the North-west Territions, also the might imperating generally in Manitolia and eastward to the Atlantic Coast. The rainfall was also the or nating many districts, more especially in portions of British Columbia, Ontario. and Nova Scotia where it a swell above as mage. In spite of the open weather in the eastern portion of the Dominion the trees were decided of leaves at a next the average date, nevertheless many birds delayed their migration southward and some plants put torth in we caves.

In British Columbia the weather conditions varied considerably with the locality, there was however, much cloud everywhere, and while the temperature was rather below average in northern and eastern districts it was average or so sewhat above elsewhere. The rightful, like the temperature, wie generally a love average over the Islands and western distincts and below over the distern portion of the Province. There was snow high up on the mountain sides on the 2nd and frosts over red at night upon four or five occasions.

The weather in the Northwest Territoria, although fine and warm from the 1st to the 8th, also during the last few days of the month was experiencely cool and unsettled during the intervening period and the mean temperature for the month cas below aver i.e. At most pages, the rain all was average or somewhat above. Snow fell upon several over cons, but it had a steed in manual week as the end of the month. Frosts occurred frequently and at Mosquit (crosch in Albert) 1 0 was received on the 14th. This low temperature exceeded in severity the minimum at 1 (2)sh. Yakon Territ ry by the recovers. These we rebare etcly in the month.

In the Province of Monotona there was more they are weather couring the early and latter part of the month and the mean temper ture and rat blue of most places were above average. Snow fell at many places, but it had all disappeared by the end of the month. The minimum temperature of the month occurred generally on the 19th and recede from 1 at Barnardo to 18 at Stony Mountain, and Winnipeg. Growth in plant life had practically recent by the 15th.

The weather in Ontari was exceptionally fine and mild, and although the rainfall was comparatively light in the more eastern accuties, also in districts cast of Like Superior and the Georgian Bay, it was gener illy above average elsewhere. Light snow fell in many persons of the Province out soon disqueeared. Severe frosts were reported from no rly all districts and at most stations, the minima of temperature was well below 32°. Taunderstorms occur. Lat many places but the damage caused thereby a scomparatively right. By the 20th most trees were denoted or leaves but there was still some growth noticed or in plant, ife,

In the Province of Q. 20th some cooler weather reported from Father Point the 20th.

is the fine height weather almost exceeded that a socied in Outario there being comparatively little rain are the mean temperature using well above average a cost places. On or after the curred and the manimum temperature of the conth was recorded, 21 d being The number of fogs was somewhat greater that that The trees were but by

The fine mild and dry leather of the last two monet provinces also be unded to New Paunswick and severe storms expected so of an at this time of the year were not re-orter. Night frosts occurred rather frequently and the lowest 'aperature recorded was 1.3.4 c. St. Stephen. In a snow real at many places and in the interior the ground . - well covered on the 3rd.

Although the gentier in Nova Scotia was exceptionally mild it was not quite so fine as in the last named province and in many places the rainfall was unusually large, nevertheless there were many bright warm days and at quite a large number of places—the rainfall was light. Gales occurred in many districts on the 15th, 21st and 29th, and some damage along the coast was caused thereby.—Frosts occurred at several stations, but they were not severe.—The trees were almost bare of leaves by the 31st.

In Prince Edward Island the weather took much the same character as that in New Brunswick, it being for the most part unusually fine and mild. No killing frosts were reported and only very light snow flurries occurred. A moderate gale was reported on the 7th but it caused little or no damage. The trees had all changed colour by the 10th and most were bare by the 31st. F. F. PAYN.

#### ATMOSPHERIC PRESSURE.

The mean atmospheris pressure for the month differed widely from average over the eastern portion of the Continent, embracing Canada from the Upper Lake Region to Newfoundland, and the United States from the Ohio Valley to the Atlantic; from Lake Huron to the Gulf the departure ranged between 045 and 048 of an inch higher than the average. Westward from Port Arthur and Duluth on Lake Superior an area within which the departure was from average to 4005 extended to the Rocky Mountains, while both to the northward towards Athabas cand Hudson's Bay and southward over the western United States and again on the Pacific Coast the pressure was generally a little below average

#### HIGH AREAS

No less than ten high areas have been charted, of these tive, including one which was centred in the Lake Region at the opening of the month and one which was spreading rapidly across the Lake Region at the close of it, can be traced clearly, either quite across the Continent or at least from the Mountains; two seem to have developed to the southward of Hudson's Bay and three entered the Continent from the Pacific and dispersed over the Western States. Perhaps the most important of them was that which appeared over Athabasca on the 11th, and brought fairly cold weather in the North west Territories, but one which appeared in much the same region on the last day of the month was also very pronounced, it moved very quickly and brought a decided cold wave to the Lake Region during the first days of November.

#### LOW AREAS.

The tracks of low areas differed very decidedly from normal, only one, and that of very moderate intensity passed across the Lake Region; two, one of which first appeared over the Gulf of Mexico, and the other a West India hurricane, moved up the Atlantic Coast of the United States; one of moderate intensity moved northward from the Atlantic to the Gulf of St. Lawrence. The remainder, five in number, were chiefly con. fined to the west and north west States and Territories and only three of them can be traced in a far northern course across James Bay to Labrador. No. 1 cannot be traced east of the Lake Region; while over the North west Territories it was attended by local rains. No. 2 appeared to the south-east of Nova Scotia early on the 3rd, and during the day gave strong northerly winds and rain over the eastern part of the Province and in the Gulf and subsequently when the storm centre was near Belle Isle, a fresh westerly gale prevailed in the Gulf. No. 3 was centred near the west Florida coast on the morning of the 5th, and thence moved rapidly up the Atlantic coast with increasing energy. During the night of the 6th -7th the centre passed across the Maritime Provinces and a very heavy rain with fresh gales prevailed. Nos. 4 and 5 passed eastward across the North-west Territories and then disappeared, the former was accompanied by fine warm weather and the latter by local rains in Manitoba. Nos. 6 and 7 may perhaps be traced from the coast of California, whence moving eastward to Arkansas, they then turned northward, the former in conjunction with an important high causing high winds with snow and rain in the Territories and Manitoba between the 11th and 13th, and the latter causing strong gales with rain and snow in Manitoba on the 15th and 16th. Both areas passed far to the northward across Hudson Bay and neither of them exerted a very decided influence on the weather in Canada east of Lake Superior. No. 8 was a moderate disturbance which appeared over the west Gulf States on the 26th; it moved quickly to the Lower Lake Region and thence to the Gulf of St. Lawrence and was attended throughout its course by strong winds and rain. No. 9 was a West India hurricane which passed across Cuba on the 29th and then moved northward. During the night of the 31st. the centre was in Virginia and easterly winds in advance of it were increasing in the Maritime Provinces and the weather was generally unsettled and showery in the St. Lawrence Valley.

#### WINDS

In the North-west Territories and also in the Maritime Provinces, the generally prevalent westerly winds were fairly in evidence but in the Lake Region there was a very decided departure from normal conditions, in assumely as easterly winds prodominated to a marked degree. Over the larger portion of the Dominion the

month was one of the quiet at Octobers on record, on the Great Lakes while—rong winds occurred on several occasions there was nothing—even locally, beyond a moderate gale. In the Maxitime Provinces and Gulf of St. Lawrence a fresh to heavy gale occurred on the 7th, and strong winds and moderate gales were recorded in the Gulf on several occasions. There was a strong northerly to westerly gale in Manitoba on the 16th, and very strong winds had occurred generally during the previous week.

#### TEMPERATURE.

The mean temperature of the month differed little from normal on Vancouver Island and the Lower Main land of British Columbia, but on the Upper Mainland it ranged from 2 to 5 below. In Alberta and the Western portions of Assiniboia and Saskatchewan it was about 4 below average, but east of this near the western boundary of Manitoba, the departure from average became plus, and Eastern Manitoba was from 3' to 4 above. All the remaining inhabited portions of Canada were also above, the greatest departures being from 5' to 6 in Western and Southern Ontario. At nearly all points in the Maritime Provinces the difference from normal was about 2 above.

The Highest and Lowest Temperature in each Province during October, 1899, were

British Columbia,	76:0 on 4th at Hazlemere.	10 ·0 on 13th at Barkerville.
North-west Territories,	83 0 on 5th at Gatesgarth.	- 100 on 14th at Mosquito Creek.
Manitoba,	83 5 on 6th at Aweme.	1 ·0 on 10th at Barnardo.
Ontario,	85 0 on 15th at Cottam.	12 0 on 1st at Savanne.
Quebec,	77:0 on 15th at Richmond.	16 $\pm$ 0 on 22nd at Brome.
New Brunswick,	74 4 on 26th at St. Stephen.	20 ·0 on 21th at Sussex.
Nova Scotia,	74 0 on 15th at Port Hastings.	23 ·0 on 24th at Wolfeville.
	and on 19th at Wolfeville.	
Prince Edward Island,	70 ·0 on 1st at Hamilton.	33 5 on 23rd at Summerside.

#### PRECIPITATION.

The conditions as regards precipitation, were not abnormal to any marked degree in any part of the Dominion. From British Columbia reports received, it would appear that the average was somewhat exceeded in that Province; and in the North west Territories and Manitoba the total, while comparatively small in most localities was yet in excess of the average, and in the Territories fell largely as snow. At Qu'Appelle, the station reporting the largest amount, it was wholly snow, and twenty-four inches fell between the 10th and 1th. In the Peninsula of Ontario, that is over the portion of the Province lying west of a line connecting Parry Sound and Belleville, the rainfall was considerably above average, and at some stations near Lakes Ontario and Erie nearly double the average, but in the more eastern and northern parts of the Province there was a deficiency, the rainfall averaging in the neighbourhood of two inches. In Quebec and New Branswick there was a very general deficiency. Montreal being the only station reporting an amount slightly greater than average. In Nova Scotia and Prince Edward Island the fall was for the most part either equal to or in excess of the normal.

#### BRIGHT SUNSHINE.

Bright sunshine was below average in British Columbia and the North-west Territories, the percentage of possible duration ranging from 19 at Agassiz in the Lower Frazer Valley, B.C. to 38 at Battleford, N. W. T., both being 11 less than the average. In Manitoba the amount recorded was just equal to the average, or 37 per cent of the possible at Winnibeg. In Ontario the average was exceeded by from 3 to 7 per cent, the amounts recorded ranging from 38 at Barrie to 16 at Woodstock and Kingston. At Montreal the percentage of the possible duration was 40, or 1 less than average, and at Fredericton, N. B. it was 50 or 8 in excess of the average.

THE BOMINION OF CANADA, OCTOBER, 1899. \* Stations not furnished with Registoring Thermometers. AT STATIONS IN PRESSURE, TEMPERATURE, WIND AND PRECIPITATION o. Barometer not reduced to Sea Loyel.

001.-00-000 = 5 000 202-00000000 - dil 1 --------77 7 5 5 2 7 7 = E 프트립기시크 의용성취 프스타르아의 프리트웨 532 873 452 submittee of carming drawnd -\$45554 \$4555 \$4555 \$4555 5888 5888 8884 8118 Hervier rull unimo ili. 95 заватуу штар туучуу = 7 7 7:2 #157897 #868 拿马 왕후일 대조 # Winn SW most and or 15.0 < ():b )800[31]] VELMITTY 10 . 5 ber pour sallong jo Jaquinii jirin j <u> 신문장당성품광광</u> 8 HE-818+4 5 :1-85<del>4</del>-55-6 DERETION OF WIND FROM 'AL 'X 소남트로스중국구 : :F .11. → 틸리 110 없고함 .11. 7 . : -= 어음이라이글노이 EEE .45 31.8 . a= += a & 'Э -<u>5-6-46-66</u> :0 Z' E . 6 top quared unble-2-1-9112 Mean amount of Mean relative Hu po anterior nearly 1000 122 Alten dadly === .918(I risamor. TEMPERATURE. FREE SET 1971 0.813 65.0 JenigiH Trus observe. 712 Poin average arraneànich лико IX 821212 22222 821212 58 0.97 -эвину PRESSURE. .189700.L 888888 =26568 =26568 66 TISHIBIH 35 30.02 858333 разпрадина ју Elevation along Sea force, in feet Pontitions IL: is apairing ARRAGESERSEASASASTESEESEE 8888888888888 M. W. Frightoniks:
Medicine Hat.
Schmouten.
Swull Current.
(ut.Appelle.) Prince Albert Barrleford Oorikup øBuiff Calgary (2) Chaplin Neose Jaw Regina Gorffin Loke
Vernon
Koper Estand
Challow rok stminster. Kootenay ... Edit Coll orks
Bureau's
Nurcouver
Nelson
Matseur s Dridge. Eners Julet ... Stroet's Lake ... Premeli Creek. Althorstopel. ... Port sumpson .

57505 BB 0500 0 0	0H2 ND 0 H 5H	n mo c mnmmmed/ dringeddd/nii (mm. 1
20222 GD 5600 G		e co o eenminono exchesciones ecc.
\$25.5 % \$4.5 5 4		- 5 Ho 5 Hodeston, Telestoretel (1996) : - 2 89 5 89229225 (19862869/11 866) 2
ರವಣ⊹ಜ ಕ್ಯೂ ಕುಣ್ಣ ಕ	<u>20-4 <del>-</del></u> 40 9 9 <u>90</u>	2 pt 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	588 54 6 9 44 656 66 6 6 6 6	# AS S 5.5554900 24654848564
.924 : :	'명말'육 - 젊음 : 옷 '음 :두	- R ನಿರ್ವನಿ ಆರ್ಡಿಕರಿಗಳ ತಿರಣಕ <b>ಿ</b> ಡಿಕಿದ್ದರು (೨೯೮೩ ಕಿ
		7 17 1 111177311
8 5 8496 H 8266	유원 등 유유 : 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	- 1 ಕಿಲ್ಲೆ ಆ ಅನ್ಯಕ್ಷಮಾಡಿದ್ದರು ಬಳಸುವ ಕ್ಷಮ್ಮ ಕ್ಷಿದಿ ಕ್ಷಮ್ಮ ಕ್ಷಿದ್ದ ಕ್ಷಿದ್ದ ಕ್ಷಿದ್ದ ಕ್ಷಿದ್ದ ಕ್ಷಿದ್ದ ಕ್ಷಿದಿ ಕ್
	16 sw 16 sw 17 sr 18 sr	2
	59 : E : 2 S	
		# 15       \$579
8 8 · · · Eu · · · · · · · · · · · · · · ·	- 원왕 : - [왕 : [원임동 등 : ] - ::: ::: ::: - = : - = : : :	- 첫 (영화 왕 持분분왕왕보조왕 - 원화 : 천 : : : (영화 :
	85   0   1000 m	= 149 B SESE-948
9 19 1 FF 1 105 E 1 1 1 1		사이 보는 사이 생각이 있는데 그 사이 있는데 그 사이 있는데 보다 되었다. - 19 1년 1일
	E 1812 3	- * .84 (9 - \$4964885*) : : : : 1   F   : .60 : : : : : : : : : : : : : : : : : : :
0 :0 : : : : : : : : : : : : : : : : :	그 하면 보고 말을 보면 하면 되었다.	- 1:9회 [원 문의목질부으병기 : [원건 : 17 ] : 17 기 : 1 회원 [ ] :
= 20	wx : ::::::::::::::::::::::::::::::::::	- 역 역기 (설립본국어 Prop. ) . 프리트 (Prop. ) (유기 2 : )
- Tip	Ten : : : : : : : : : : : : : : : : : : :	The street was a street to the street of the
	: : : : : : : : : : : : : : : : :	· 제 [유대 [이 [5]출판연음하다 [ ] [15 ] [ [윤 ] [ ] [ [급하 ] ] [ 이터 ] [
of <u>s</u> ; n∞i; no+i; ;	mg   1   0	우 [우류]의 [연고장의 이름표의 [] [80] [ 사 ] [ [80] [ ] [ [80] [
	전화 ( ) 는 기원 ( i - )	
		X . House to be a second
81888 88 5844 8 :	221-24 Z2 Z2 Z2 -	2 5   ASABABAS   LEESSESSES   5 5 2
22772 : T : TSTT : T : T	<u> </u>	- 회복기원 [8] 복원회원활동회원활 (기대의는원학대원원) ( [대는언 ])
* 100000 000 100000 100 10000 100 100000 100000 100000 100000 1000000	- X a X   123   1 X - B   11 B   1	- Need to developed (Medal/Ande) to be a 2824 to dealer and a 2824 to de
		8.x4 x 255555555 (\$255385588 (Figs) 5
	8888 41 886 KB.	case a cayadeama (amadamasma) (asa a
- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	28 <b>2</b> 2 55 25 21	- 마타면영 전 <sup>1</sup> 년년부위키개유명다 (경우인타파유학원급) <sup>1 1</sup> 14.42 (인 - 구조급은 조 출출위위유열년조급 (경우인타파유학원급) - 구조인 인
2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
30400 02 Febbe & 5	(-1) \$15 (20) = 20 (1)	control of the contro
88448 84 8888 6 8 	- 유무용목 (부용 (투용목 병원 )	- 역목목장 '앞 목표추동본도록용로 '보다수용문부로두다큐     동본로 [u
	267   18 188   11 11 1	- 9 : : : 9970 : : : : : : : : : : : : : : : : : : :
letaint.atti	853 : : : : : : : : : : : : : : : : : : :	그 레드를 그는 유명화했다. 병원 그는 원인 등 18일 등 144명 등 등 모모 모
	292 · · · · · · · · · · · · · · · · · ·	- 우 : 1 1 1 5명원의 (경원 ) 명 : 1 1명 : 1 1명의 (경원 ) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	888 111113411111 888 111111134	a i i asaa aa i aa i aa i aa i aa i aa
	857 78 888 188	- 4   1   1   7844   75   - 2   15   1   44   1   1   1   1   1   1   1
	88 · : : 88 · : : : 8	- 第 15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
- \$24434565755754 188 :	\$1-8EB-168EB8FF888	왕년 첫 첫 교급을 맞고 하는 학생 전 교육 수 교육 등 학생 수 등 하는 학생
" 22222222222222222	252	4987888998899999888886478888647888498888888888
- 854488688888	2848-2848-884882 2848-2848-884882 2848-2848-	ankanaankanaar4233, ubunatanankunatakata us44949440449auuutaatauutuqqqaassaatat
		Calabas anna a Hitara Islanda
	weme)	State of the control
Man mg.	Awe	10 on
Part of the state	Service of the Francisco	A PART OF THE PROPERTY OF THE
W.Therefulan He Fundan He Fundan He Marchay Ma	Minnedosa. Minnedosa. Minnedosa. Minnedosa. Minnedosa. Minnedosa. Porte Colonea. Printere la Preference la Brandon.	Handeshary Sendony Sendony Sendony Sendony Mesamble Schrederic Sch
N. W. T. RRITORIES;—COM- leader of the control of t	Massimon, 19  Minneloon 19  Municeloon 19  Pert Osbrue 19  Per	State of the control

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE HOMINION OF CANADA, OCTOBER, 1839 of innibited and included to See Level "Sations not furnished with Registering Thermometers

Zer of Eogs

	gpro-	Zo. of Thund, steeds - Xo. of Fores	E MEDICAL IDICAMBALINA E E DICE E E ENCAPARE DE CARACTERE
	3111211	20. 10. 10. 10. 10. 10. 10. 10. 10. 10. 1	
		Synband To lox	<ul> <li>5 8844484915542395494442888 88 4684 868 8848555888888 48484848888</li> </ul>
	23000	10 f0' dim stal	<ul> <li>8 APIDESERPRINESERSEN SE DEKK TKR BROKESPOKEK FREUSERS</li> <li>9 GERRESEK (1974) FREUSERS FREUSER (1974) DEKKESPOKER SERGESTERS</li> </ul>
	ź	the reserved the three t	
	LAT	Pufference from Average.	6 5
	j.	Difference	
	PRECUPITATION	Amount	8. ARREPRING VERBOR 17. ARREPRING BY 1888 1844 (1788867) ARREPRING BY 1846 (178867) ARREPRING BY 1846 (
	Z	-ib has 9) a(l ment noticen	- 11: 5 - 1 - 1 · 1 · 1 · 1 · 2 · 4 · 1 · 2 · 1 · 1 · 1 · 1 · 1 · 1 · 1 · 2 · 3 · 3 · 1 · 1 · 1 · 1 · 3 · 3 · 3 · 1 · 1
	7 4		
	TY	Mighest day'.	
	VELOCITY OF WIND		
Į	2	Mean mile.	
		sanoq jo	୍ଞାର ଖୌନ । ଅଞ୍ଜ ଅଷ୍ଟ୍ୟକ୍ର ଭୌଗଳ । ଆ ବିଜ୍ଞ ହା ଲ । सहस्र स्थापन
		ւթվառու ինթվ	우리는 우리는 그는 내물을 유명하였답다. 우리는 유리는 씨의 홍수 이 나라는 본다. 중요용약절급육없
2		,)	
ote	РКОМ	X $M$	
8	=	AL	1   1   2   1   1   1   1   1   1   1
er.	× IN	S. W.	[종]# 8 인지에 스트워워스지 : [유] [휴]지 [ [ [유] 연] 연극 연극 전 [[연] 현대점점역을받은
Ē	à	8	
Ē	3		
Registering Thermometers	DIRECTION OF WIND	8' E'	
2	DIR	E.	
with		Z' E	
ă		Χ.	HERBOLD FOR THE PROPERTY OF TH
she			1 n 1 2 a n 10 10 1 a
E	detely	No. of day comp cloudeds.	
٦	30	Mean amount	च । जिल्ला करणां । चित्र । जर्मा । चर्चा । वर्षा करणां । चित्र । चर्चा । चर्चा । चर्चा वर्षा करणां । चर्चा । चर्चा । चर्चा वर्षा करणां । चर्चा । चर्
2 2	.DII	Mean relative	- Principal Carlo Pakarana and Andrian Bala Bala Bala
100	11	Mean temperati Dewpoint.	o kalendari kan ili da kata kan kalendari kan zailari zailari k
Stations not furnished	To 910	egust 18 ogu temberati	2
٠		Meanst	을 발표를 발표되었다고등실시스 (프로스스스 (A.S. 스토트로 프로스스 (프로프스트로 프로프트트를 발표되었다)
		. and	ា ក្រោយការពេលប្រើក្នុងបិត្តការពេលក្នុង ខេត្តការបស់ក្នុង សមាជា គ្នានេះ សមាជាការការការក្នុង គឺ <b>នៅនិតតិវត្តិន</b> ការការការការការការការការការការការការការក
Level		189₩⇔I	ි ය මිදෙසාවල් අවසන් අවසන් අවසන්ව සිට අවසන් වෙන පැවසිට වෙනවන් විසින් අවසන්ව සිට සම්බන්ධ සිට සම්බන්ධ සිට
	22		
Sea	I KMPERATURE.	91g(I	e seconditionareactions of attacker borthogone management
₽	7.	Highest.	octoboot websecosponder not selm, do whathacises o cosponde compenses and self-self-self-self-self-self-self-self-
9	3	1719×do 2189 T	- 그 ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^
2		Difference from average.	c industricularing industries and in
not reduced		anumaftitl	a -and $a$
er.		Me:01	- 후 [급급소항문문교도소유다구유다육문항망양문교육 [항상 [문항도원 [라도본 ]라운공라고라면양환문문교 <b>라운라슈타</b> 루타
Barometer			
2 2		- 920nfl	
-	EE.	1.077.021	7 77 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
	PRESSURE.	Highest.	· [ - 호기 #
	Ъ		1. (20 mm) 1. (20 mm
		Mean reduced	
1		Jozef, in feet.	11 清 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	trag a	ryoda gojiazeja	5.4×10.5055759-39-99-99-99-99-99-99-99-99-99-99-99-99
		. Wabutignod	128
ı		.Z abutitude Z.	일일등으로 현대용등록 무용한 소개하는 다른 아내는 소개화의 등을 바꾸는 등록 무용한 다음을 보고 있다. 중국 모두 등록 모두 두두 등로 무두 등로 무두 등록 모두 등을 모두
-		Z atmental	त्रवास्त्रवाचात्रवाच्यावाचाचाच्यावाचाचाचाचाचाचाचाचाचाचाचाचाचाचाचाचाचाचा
		54	
		Ĉ	
		ATION	그 전국 하는 사는 음식을 가고 하면 있다면 요즘 한 목숨 회원들이 가는 그리고 되었다. 하고 말을 받는 사는 음식을 가고 하면 되었다.
- [		Ψ.	· 다른 사람들은 그는 아이들 아이들 때문에 가장 아이들
		/	
			り、 - ※出たらっすがなったコンののこはは上作出コポットコポッピスペというのかってスタスロフはなたコンプログラインのは、またはないにはずら

00 0 0mor		D-0 .0145 05	550	e- e
### ##################################	88536 AA5	55495556 85 55225568 85 522268 65	448 448	25 <u>7 2</u>
	A18811.1888	海里民等约60万年 、1857 、	995.1 985.1	금축 금은 것
m 6 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	17777	128343246 1400246	11	4- 121 V
153 E   1778	######################################	24377555 338 5-65-5-6 384	669	55 : 6 S
	* <b>%</b> * 4 <b>%</b> 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	STAN STAN	8 : : Fi	· · · · · · · · · · · · · · · · · · ·
	25225	報報 音楽 音 : : : : : : : : : : : : : : : : :	∄ :	$\frac{\pi}{\pi}$ $\geq$ $\frac{\pi}{\pi}$
	⊒ <u>1</u> 1=1- ::	EC-C= .	·=	ie i i
. <mark>공용 ·원 [ : ] ·상</mark> 경찰	80 <u>7</u> 07	表表的表现象的 · · · · · · · · · · · · · · · · · · ·		9% B 8
<b>E</b> B 1911 1 9194	# <b>42</b> 785 7	14884444 ; ;	E	27 2 4
=8,8; ; ; 3, =0	FBB08=: "	4년파일후부위부 :	£115	94 j fi f
8 <sup>1</sup> :무 : : : : : : : : : : : : : : : : : :	강취임(기소리 : : *	San Engree	4.	= =
<sup>97</sup> : 1 : 1 : 7 : <sup>2</sup>	2-84£	*8=57448 ::	3	10 : 20 10
95 E ::: 61 :016		<b>ह</b> =त्रा <sup>देश=</sup> गण : ;;	± 1 − 10	왕리 및 인
ne e : : : n .ee		으로 보다 다리스 ( ) ·	21	FE 11 A
400.001110118-	역원 <b>음</b> 스템이 : 역	왕의 물사가이스	271-	-= ; :2 -9
=" = ]	후하다라는 : : : : : : : : : : : : : : : : : : :	9 <u>8</u> =2100 = 8	£ 71	== 1 / S
_ =	F1-1887.0	흟 <sup>ლ</sup> 靑프다고도	22.4	57 t
	1	무플로의	1.	84: -
	Talante	G1-1+12	:	1-12 to
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	要目を	18 : : : : : : : : : : : : : : : : : : :		7
	<u> </u>		. :	
**************************************	5.42   6.00-6 5.42   14.45 5.60,556575	2552551   Z5 2555551   Z5 2555551   Z5	235 235 885	55 : 1 5 56 : 1 8
00 0 0 000 3558	massss-as 587555468		-4: #86	20 5 <del>7</del> 48 5 8
E# # 1. · 6#6#	84989=8 <b>8</b> 4	25/4/200 42.	¥,	-1-: 1-
, ee e   155ee	2012222222	mess-css	900	12 12 2
755 A	문서지 등록 등 자리 지다. 1 1 1 중 의 등 작 중 음	75 2755888 19 2265888	183 111	- 65 · 8 · 7 · 64 · 7 · 64 · 7 · 64 · 7 · 64 · 7 · 64 · 7 · 64 · 64
© 20 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	212121-22 [ ]		-11	1114   11 1- 1114   20 0
9 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	252772728 	\$\$\$ \$78.48   40 606 x x 600 = 100	<b>₹</b> 1100	© 1
# : 1	항념성 위	8888	Ē : E	<u> </u>
affilier is a	688 S	2920 3930 3955	8 6 5 6 4	S 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	용면서 프	75 B B 77	<u>=</u>	
- 1	888 18 888 18	8535 / 11 1 1 1 1 1 2 2 2 2 3 1 1 1 1 1 1 1 1	8	
# 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	519888 .:	\$3888   HAN   NA	- # : : - # : :	28 1 8 E
- 85888914×22 .0	역취유시트워스 교육	#EXH444/489999	= - 1	의 '강동영 B
. #8555875577 R	898888558	# # # # # # # # # # # # # # # # # # #	983	2893E E
- 청울학문중중중학수수 1년 - 청울정청경주역군단중 -원	50575757 257924.62	######################################	249 229	#6784 5 \$4888 5
1 : : : : : : : : : : : : : : : : : : :			11	
	# 1	888. E. E. E	Ę.	8 182
	NSW ictom Manual Ma Manual Ma Ma Manual Ma Manual Ma Ma Manual Ma Ma Ma Ma Ma Ma Ma Ma Ma Ma		28 Z E	
Digitals — (Continued) Biograph of the Continued of the C	NEW Partyswick: Chattenn Chattenn Chattenn Chant Deproux St. dom Partysoux St. dom Matten Matten Strates	Nova Srentz Salara Sala	P. B. ISLAND: Charlotterown Summers to Ramidton	New FOLKMAND - SE, Jehn's - Channell - Gape Norman - Among Pont Robot - Pont Robot - Pont Robot - Pont Robert - Prospect - Garagest - Forspect - Garagest - Forspect - Garagest - Forspect - Garagest
\$ <b>.</b>	इंदर्ग्ड इंदर्ग्ड । बर्रे	SENERGE STERES	25%=	\$%50.44 <u>8</u> 5

## PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c., DURING OCTORER, 1899.

	RAINI ALL				SNOWEVIA						
STATIONS	Amount in inches.	Days 01 or Over	No. of Fan Days.	Heaviest Fall in Month.	Date.	Amount in inches.	No. of Days.	Heaviest Fall in Month,	Date.	Thunder and Lightning &c.	
Bartisa Colematy Nanamo Langley, Goldstream Lake Alberni, Cumberhand, Royal Och,	5 91 5 78 6 54 6 54 6 84 3 89	13 12 17 15 14 14	18 19 14 16 17 17	2 14 1 19 1 33 1 50 1 67 0 70	19 18 19 20 19 15					13th, first frost,	
N. W. TPERITORIES Salterats Robbenu N. E. Belger Hills West Beaver Hills Innistal Courts . Dulsbury Stu'ing .	0 25 0 50 0 05 0 01 0 12 0 42 0 55 R	1 1 1 1 1 2 8 6	20 24 20 18 24 24 24 24 23	0 25 0 50 0 05 0 01 0 12 0 30 0 55 R	25000000000000000000000000000000000000	9 5 18 5 6 0 5 6 3 7 14 0 9 0 4 0	6 6 10 12 + 6 6	470 10 0 3 0 2 0 3 7 6 0 9 0 1 0	16 11 17 16 9 10 14 9 11 9 15		
Myxrrony Shoat Lake Hartney Greenwood Rapod City Cartwighted Belinout Pembina Crossing Norquay Selkirk Mowlen Elgier Tin the Mountain Clearspring Oaklanik Beaver Crock	10 1 50 2 54 1 37 0 24 1 86 2 05 1 65 0 47 1 68 2 02 1 68 2 01 1 56 1 91	0 4 1 6 9 11 6 5 3 2 10 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	សិក្សិត មិន មិន មាន មាន មាន មាន មាន មាន មាន មាន មាន មា	R 0 85 0 86 0 75 0 09 0 78 1 04 0 84 0 10 0 50 1 02 0 57 0 50 1 03	9 13 12 15 23 11 13 11 13 10 12 12 13 16 13 16 17	12 0 9 0 7 0 19 6 Snow 4 0 0 3 6 5 9 0	5 3 1 2 3 melader 5 3 1 6 3 2 2	0 3 3 0 5 0	13 16 16 16 16 16 16		
Ursi, Ursi, Ursi, Ursi, Ursi, Ursi, Ursi, Ursi, Unitsville, Obver's Ferry Emissione, Glen L'Im Providence Bay Sparrow Lake, Thompson, Deer Park, Danton, Watford Scarboro Orangeville Emislade Lanselowne Croydon Parina, Mull and George town Anden Sunslame N. Williamslone Golerich Amrora Doaltown Williamslone Golerich Amrora Doaltown Williamslone Jennyn Woole Port Burwell Luoi's Head Wanton Lamedoch, Pinne eton Mechague Wyoning Elim Robdin's Mills U Shanda Cherry Valley	######################################	12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	24151846211022126818122186811861186181118688	1 (2) 1 (2)	និវត្តិនិងមិនមិត្តអាការមិត្តមិនមិន្ត្រមានអាការកកការបន្ទឹងនិទ្ធិមិន ក្រុ		1		20	14th; 31st, robus still there, 14th, 15th, 15th, 23rd, 14th, 23rd, 14th, 22nd, 15th, 16th, 23rd, 14th, 24th, 13th, 22nd, 14th, 22nd, 14th, 22nd,	
Nia Bid Nswick Point Eseminio	2 83	6	25	1 43	6.7						
Novy Scotta Port Morion	1.21	9	2-1	1 45	22						
P. I. ISLAND Mount Stewart Marray River	1 27 5 21	12	25 19	2.84 3.04	6.7						

#### Thunder recorded on-

- 5. Rivers Inlet, Sable Island, Oonikup, Quatsino.
- 6. Calgary.
- 7. Calgary, heavy hail.
- 13. Lion's Head, N. Sister Rock, Cockburn Island, Port Arthur.
- 14. Coldwater, Gravenhurst, Stratfard, Lindsay, Ursa, Providence Bay, Deer Park, Scarboro, Emsdale, Midland, Georgetown, Sanshine, Wyoming, Uxbridge, Alton, Uplands, Owen Sound, Otonabee, Ridgetown, Stouffville, Bancroft, Beatrice, Paris, Sprucedale, Agincourt, Hamilton, St. George, Stony Creek, Haliburton, Meaford, Kinmount, Toronto, Parry Sound, Ottawa, Saugeen, Guelph, Durham.
- Cockburn Island, Durham, Coldwater, Gravenhurst, Lindsay, Providence Bay, Midland, Jermyn,
   Wiarton, Bognor, Otonabee, Collingwood, Lakefield, Point Clark, Meaford, N. Sister Rock.
  - 16. Jermyn, Lakefield.
  - 17. London, Linesay.
  - 20. Montague, Agincourt, Quatsino.
- 22. Durham, Toronto, Brantford, Port Dover, Birnam, Hamilton, Lucknow, Cockburn Island, Port Stanley, London, Stratford, Dutton, Scarboro, Emsdale, Sunshine, Wilton Grove, Jermyn, Lion's Head, Wyoming, Alton, Uplands, Owen Sound, Welland, Sarnia, Point Clark.
- 23. Coldwater, Gravenhurst, Lindsay, Providence Bay, Sparrow Lake, Dutton, Scarboro, Emsdale, Midland, Georgetown, Sunshine, Wiarton, Wyoming, Bognor, Otonabee, Bancroft, Point Clark, Beatrice, Birnam, Agincourt, Meaford, Erasmus, Toronto, Port Stanley, Saugeen, Peterboro.
  - 24. Wooler, Kinmount, Father Point, Haileybury.
  - 26. Sunshine.

#### Aurora recordea-

Where the class of aurora is noted by the observer, it is given, (I) being the brightest, (IV) the feeblest in brilliancy.

- 2. West Beaver Hills, IV; Aweme, IV.
- 3. Savanne; St. Anne, 11.
- 4. Prince Albert, I.
- 5. Gravenhurst, IV; Barnardo, IV; Pembina Grossing, III; W. Beaver Hills, IV; Cape Magdalen; Red Deer, IV; Duck Lake, III; Hillview, II; Rat Portage; Georgetown, IV; Toronto; Qu'Appelle, IV; Yarmouth, IV; Quebec, IV; Toronto, IV; St. Anne, IV.
  - 6. Savanne; Qu'Appelle, IV; Prince Albert, L.
  - 7. Pembina Crossing, 111; Cannington Manor, H; Aweme, H; Qu'Appelle, IV; Haileybury, IV.
  - 14. Chicoutimi; Father Point, III; Quebec, IV; Haileybury, IV; St. Anne, II.
  - 15. Quebec, IV; St. Anne, IV.
  - 22. Cape Chatte, H; Tagish, H; Alton, I; Yarmouth, IV; Dalhousie.
  - 23. West Beaver Hills, IV; Father Point, III; Truro, IV; St. Anne, III.
  - 24. West Beaver Hills, IV; Red Decr, 1f.
  - 25. Cannington Manor, IV; Savanne; Minnedosa, IV.
  - 26. Cape Chatte, IV; Savanne; Father Point; St. Anne, III.
  - 27. Savanne.
  - 28. Portage la Prairie: Hillview, 111; Savanne.
  - 29 Savanne
  - 30. Pembina Crossing, III; West Beaver Hills, IV; Swift Current, IV. Prince Albert, II.

## PROPORTION OF ERIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF OCTOBER, 1809.

#### Hours Express

			_													
	Ē	= = =		Ē	ā · s	Pt., 10.	11 ::-10:	N. Senth	1 - 1	Ξ - - 11	<u><u><u>a</u></u></u>		med e	6 p.m.	and -	i i
Victoria			11 (11)	0.12	0.21	to 200	e. 90	0.00	n 10		0.10	0.05	0.05	0.60		
				0.00												
Kuper Island Agassiz				b 00												
Battleford .				0.35												
Indian Head				0.03												
Brandon				0.47												
Winnapeg.				0.22												
Durham				0.11												
Woodstock				0.11												
Toronto				0.25												
Lindsay				0.26												
Barne				0.21												
Kingston .				0.20												
Ottawa .				0.23												
Montreal.				0 17												
Fredericton		0.05	0.55	0.10	()}	0.63	0 66	0.55	0 10	0.52	0.4	0 45	0.06	0 00	.	
	in faller	Kuper Island	A 1441 A	Earth ford.	Indus Bod.	Burden	Wohnpege	Durkon.	Woodstools.	Formito,	Lindsay.	Earlie	Kingston.	Ortawa	Montread.	Fredericton.
		-		-	-		-	-	-						_	
Mean proportion for month • Content son hime to	0.30	0.30	0-19	0/38	0.28	() (34)	0.37	0 11	0.46	0 45	0.42	0.08	0 46	0.35	0 40	0.50
Difference from average	OG	103	11	11	10	0.00	0.00		$\cdot = \Omega_1^*$	- 03	+ 03	; 0}	- 04		01	- 108
Maximum daily amount	11-50	0.86	0.71	0.85	0.81	0.90	0.81	0.91	0.91	0.92	0.97	0.85	0.89	0.86	1 00	0-93
Date	3 4	12	4	29	4	3	6	30	25)	20	30	30	ĩ	30	21	13
No, of days completely clouded	 12	12	16	G	12	11	8	8	+5	6	7	9	£i	8	7	4

#### OBSERVATIONS AT MOOSE FACTORY, HUDSON BAY, 1899. Latitude, N. 51-16'. Longitude, W. 80° 56'. Height, 30:5 feet.

MEAN PRESSURE Temperature. AT 32 .  $\begin{array}{c} {\rm Total} \ \frac{\ln p^{3}}{\rm Ant} \\ {\rm Ant} \ \frac{\rm s_{1m}}{\rm s_{1m}} \end{array}$ 9 a.m. 2 p.m. 7 p.m. 9 a.m. 2 p.m. 7 p.m. Mr.an Mean, Mthly Max 3 Mm. Max, Mm. Mean 1899. January 29 96 29 95 59 95 9.0 0.4 4.3 18.2 .3.0 42.0 February March April 39.5 33.8 22.0 72.0 14.0 May June 57.0

#### OBSERVATIONS AT NORWAY HOUSE, N. W. TERRITORIES, 1899.

29 84 29 80 29 81 61 8 67 7 62 2 71 9 49 0 60 5 87 0 31 0

July .

13

Latitude, N. 53, 58. Longitude, W. 97, 52. Height, 730 feet.

	' Mean Pressere at 32.				Times rature.					Preciei Tailos,			Ž.	
	S a.m.	6-28 p.m. Mean.	S.11 v 1.	6.28 p.iis.	Mean Wix.	Mean Min.	Mean Daily Range	Mrbly Me in.	M.s.	Min.	Total And	Depth of Snow.	Aurass.	Thunda
1899		in. m.									111	ш.		
March	29.27	29 28 29 273	7.3	0.5	7.6	16-6	21-2	1-4	20.0	36-0	0.28	2.3	7	
April	29-09	29 08 29 089	29.0	32.5	08.8	18-1	20.7	28.5	to 5	9.0	0.63	1.0	2	
May.,	29 21	29 18 29 165	12.3	47.1	55.6	32.6	23 0	. 44-1	$\tilde{i} \leq 0$	12 0	1.59	8.6	1	l
June	29 03	29 03 29 030	55.8	60.3	67. 5	<u> </u>	22.6	56.2	55.5	33.5	3.73		0	1
July .	29 08	29 05 29 665	G2 9	65-9	71 >	52.3	19.5	62.1	83.0	10.0	2.53		1	_
August	19.02	29-05-29-63	57.8	59.4	65-6	48 6	17 0	57.1	77 0	29.7	2 46		12	4

#### OBSERVATIONS AT FORT CHURCHILL, HUDSON BAY, 1899.

Latitude N. 48 51. Longitude W. 94 10. Height, 38 feet.

	Mina Press at 32.	'EE	TEMPERATURE		Parcien v
	6 · .m. 2 p.m.	тран 6 г m 2 р m	, 10p.m Mesn Mean Max. Mm.	Mithly Mean Min.	Total Depth of Amt. Snow
1899.	m. in.	in.			m. m.
January	1 29 991 29 95	29 96   24 0   19 5	21.9 14.6 31.3	1 24 5   10 0   57 0	0 12 1 2 4 (
February	2"1 92 29"93	29 91   22 2   15 9	19 3 12 7 31 2	22 0 10 0 50 0	0.06 0.6 9 (
March	20 14 30 15	30 16 16 0 7 0	25.3 0.8 25.3	13 0 5 0 45 0	0 41 4 1 12 0
April	29 92 29 93	29 96 18 4 20 9	15 3 30 0 4 2	17 1 45 0 18 0	0.80 3.0 2 0
May	30 11 30 11	80 10 22 6 27 7	23-2 34-6 12-6	23 6 5 0 10 0	6 37 - 3 7 - 1 - 6
June	29 94 29 93	99 99 49 8 45 1	40 0   52 1   28 8	40 4 75 0 13 0	240 05 01 6

#### FORECASTS FOR OCTOBER, 1829.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day

The number of predictions issued during the month was 937. These were divided as follows:—

			VFE		
District.	No. Issued.	No Fully	No Partly	No. Not	Percentage
	_			-	
Manitoba	91	F113	20	4	80/2
Lake Superior .	102	64	26	12	75.5
Lower Lake Region	. 118	82	24	12	79.7
Georgian Bay	117	79	24	14	77.8
Ottawa Valley	99	70	15	9	83.3
Upper St. Liewiene	102	7.1	21	7	82-8
Lower St. Lawrence	104	67	25	12	76-4
Gulf	99	155	21	13	76.3
Maritime Provinces	105	71	16	18	75/2
Total .	937	640	192	105	78:5

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,

Director.

Meteorological Office, Toronto, November 27, 1899.

### METEOROLOGICAL SERVICE, DOMINION OF CANADA.

# Monthly Weather Review.

VOL. XXIII

NOVEMBER, 1899.

No. 11

#### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraph reports of observations received at this office for the purple of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

#### REMARKS UPON THE WEATHER.

The weather of November throughout the greater part of Canada was exceedingly fine, mild and dry; and the mean temperature reported from stations in British Columbia, the Territories and Manitoba were almost phenomenal, exceeding the average in some places by more than 20°. Snow was reported from nearly every station and in some sections of the country the falls were heavy but by the end of the month the ground was bare nearly everywhere. In many districts plants shewed signs of growth and some wild flowers were still in bloom on the 30th.

In British Columbia the weather, unlike that in other portions of the country, was unusually gloomy, and over the islands and lower mainland it was exceedingly wet; nevertheless it was exceptionally mild, and on the last day of the month the signs of winter were few. At some stations the maximum temperatures were well above  $60^\circ$  whilst at a few places the minimum temperatures were not much above zero. In many districts wild flowers were still in bloom on the 30th, and some plants put forth new leaves.

In the North-west Territories the weather was most exceptionally fine, mild and dry, the amount of sunshine being unusually large, the rainfall in most places light and the mean temperature at some stations as much as 20 above average. The minimum temperatures recorded were generally from 10 to 20, and the maximum temperatures from 55 to 65°. Snow fell in some localities but in most cases it was light, and by the 30th the ground was bare again. Garden and wild flowers were in bloom on the last day of the month and the rivers were free of ice.

The mild weather in the Territories also extended to Manitoba, but in this province there was more precipitation and in the eastern portion the weather was not so fine. The minimum temperatures which occurred before the 20th were generally lower in this province, but the maximum temperatures were about the same. Snow fell in most districts but soon disappeared. Ploughing was continued up to the last day of the month, at which date the rivers were still open.

In Ontario the weather was exceedingly fine, mild and dry, the mean temperature being generally from 2° to 4 above average and considerably higher to the north of Lake Iluron. The precipitation which was almost altogether rain was well above average in all districts, and the amount of bright sunshine also exceeded the average. Light snow fell upon several occasions but it had all melted by the 30th. In the southern and western counties the minimum temperatures were generally above 20 whilst in the northern districts they were somewhat lower. In many places garden and wild flowers were still in bloom on the last day of the month and there was little to indicate winter.

In the Province of Quebec the weather was somewhat similar to that in Ontario but the mean temperature was only just above average and there was rather more precipitation. The minimum temperatures which occurred generally before the 20th were below 20, and at one station, namely Brome,—5 was recorded. The precipitation was mostly rain and although some snow fell the ground was bare on the 30th.

The weather in New Brunswick, although dry and moderately fine, was rather cooler than usual, the mean temperature at most places being below average. On the 12th a heavy gale accompanied by snow occurred, after which the weather cleared and turned colder the country presenting a midwinter appearance. A few days later rains and afterwards sunshine quickly melted the snownear the coast; nevertheless there was much snow in the interior on the 30th. The minimum temperatures recorded were generally below 15°, and they occurred between the 14th and 18th. Navigation to Fredericton on the St. John River closed on the 13th.

In Nova Scotia the weather conditions varied with the district; altogether, however, they were about normal. At Port Hastings the mean temperature exceeded the average by 2.8°, and at Parrsboro, the precipitation was

2:73 inches above average, but with these exceptions the departures were not great. Near Truro enough snow fell for sleighing and there was still snow on the ground on the 30th. At Sydney, Cape Breton, the first ice formed on the ponds on the 4th, but there was none on the 30th.

The weather in Prince Edward Island was much the same as in New Brunswick, nevertheless in some places it was cold and wintry. At Charlottetown sufficient snow for sleighing fell but by the end of the month it had disappeared. The minimum temperature in most districts was above 20, but in a few places it was below.—F. F. PAYE.

#### LOW AREAS.

Of twelve low areas traced during the month, the larger number were of feeble energy. Six first appeared over British Columbia and passed over Canada far to the northward. No. I was a continuance of No. 9 on the October chart. It passed across the Maritime Provinces on the 1st and 2nd, causing rain in the Maritime Provinces, snow in the St. Lawrence Valley, and strong breezes and gales from the Lakes to the Atlantic. No. 2 appeared over the South Atlantic States on the 2nd, and between the 3rd and 4th it caused heavy snow and rain in Ontario and Quebec, and in the Maritime Provinces rain, and at the same time the winds increased to gales over our Gulf and Ocean districts. No. 3 was a moderate depression which between the 6th and 9th passed from the British Columbia Coast far north over Canada to the Gulf of St. Lawrence attended by light rains, more especially from the Lake Region to our Atlantic Coast. No. 4 first appeared in the neighbourhood of Nebraska on the 9th; it passed a little to the southward of the Lower Lake Region and to Long Island, New York, as a moderate depression, but after reaching the Atlantic Coast it rapidly developed, and on the 12th swept across the Maritime Provinces as a severe storm attended by severe gales together with a heavy snowstorm in some localities and heavy rains in others. In Ontario and Quebec it caused light precipitation only and chiefly as now. No. 5 was a shallow depression which appeared in the Western States on the 13th, and dispersed over the Ohio Valley on the 14th. It brought a fairly heavy rainfall to south-western Ontario. No. 6 appeared over British Columbia on the 13th, and travelled with much rapidity far north over Canada to the Lower St. Lawrence, thence southerly over the Maritime Provinces and off the Cape Breton Coast. It caused very little precipitation except in the Maritime Provinces where rain fell heavily during the night of the 15th, and the winds increased to fresh gales both in the Maritime Provinces and in the Gulf of St. Lawrence, and gradually shifted to the north-west and north. No. 7 also first appeared over British Columbia, but on the 15th, and it followed very much the same course as No. 6, but a little further to the southward, and after reaching the St. Lawrence Vallev it passed south-castward to Maine and thence over Nova Scotia. It gave showers pretty generally in Canada, but the rainfall was light except in the Lower St. Lawrence Valley and the Maritime Provinces. The winds also increased to the force of a moderate gale in many portions of the Lake Region. No. 8 was situated over British Columbia on the 18th, whence it moved far northward over the Dominion eventually travelling down over the St. Lawrence Valley on the 21st, and dispersed on the 22nd. It gave light precipitation generally from the Lakes to the Atlantic but scattered showers only elsewhere except in British Columbia. No. 9 was a moderate depression which was situated in Kansas on the 19th, and dispersed over the Middle States on the 23rd; it did not affect Canadian weather. No. 10 was situated in southeastern Texas on the 23rd. It afterwards moved along the north shore of the Gulf of Mexico and disappeared off the Hatteras Coast on the 27th. It likewise did not affect Canadian weather. No. 11 was a moderate depression, which like many of its predecessors during the month passed from British Columbia far north over Canada to the Lower St. Lawrence Valley, its accompanying showers being much more generally experienced in Quebec and the Maritime Provinces than elsewhere. No 12 was a moderate depression which travelled over British Columbia to Lake Superior between the 27th and 29th, and then dispersed. It caused light local showers as far east as the Ottawa Valley.

#### HIGH AREAS.

There was not much 1 igh pressure during the month. The following description will give an idea of the prevailing conditions. No. I was centered in Manitoba on the morning of the 1st as an area of importance attended by cold weather; by the following morning it had two well defined centres, one situated over Lake Superior, the other in Dakota. The Lake Superior centre passed between the 2nd and 4th southenstward and off the Cape Breton Coast attended by moderatly cold weather from the Lakes to the Atlantic, whilst in the mean time the Dakota centre trevelled southward to Texas, and then recurved to the north-eastward and reached the Atlantic Coast on the 8th. No. 2 was situated in the North Saskatchewan Valley on the 9th whence it travelled slowly over the Lake Superior and the Lower Lake Regions and passed off the Middle Atlantic Coast on the 14th. It was attended by sharp freezing weather in Canada, but no very low temperatures were recorded. No. 3 moved into Lake Superior on the 15th, from the northward. on the 16th, it passed over the Ottawa and St. Lawrence Valleys and thence southward and off the New England Coast. It was not marked by anything more than moderately cold weather. On the 23rd high pressure spread quickly over the

Continent from the Middle Pacific States and up to the 26th the distribution of pressure was largely anticyclonic. There was, however, no well defined movement and after the 26th the general distribution of pressure changed to cyclonic.

#### WINDS.

In British Columbia the direction of the wind during the month was very largely easterly and the force of a gale was reached on several occasions, more especially on the 19th, 20th and 25th. In the North west Territories and Manitoba the southerly direction predominated, more especially in the Territories. The velocity seldom exceeded the force of a fresh breeze and that of a gale was only experienced on one or two occasions. In the Lake Region the direction was variable, no one direction being especially marked, the force of a moderate gale was reached locally on the 1st, 11th and 17th; there were no heavy gales and even strong breezes seldom occurred. In the St. Lawrence Valley the Gulf and the Maritime Provinces, the westerly direction was more general than any other, and in the Gulf and Maritime Provinces gales were experienced on the 4th, between the 12th and 13th, and between the 15th and 16th, the gale of the 12th and 13th being the most severe generally. Warnings were issued for the gales which were experienced from the lakes to the Atlantic except that of the 15th and 16th, in Eastern Canada, and this storm was seemingly only heavy locally. The signals were not hoisted at some stations in the Maritime Provinces before the storm of the 12th had begun, but the Friday night's forecast and the Saturday night's bulletin had both announced that a gide was indicated for Sunday, the 12th instant, in the Maritime Provinces. With regard to this latter scorm it may be mentioned that at Port Hood seven fishing vessels went out on the morning of the 13th, in face of the warning and one of these vessels was swamped and another lost.

#### PRECIPITATION.

The rainfall over Vancouver Island and the Lower Mainland of British Columbia was excessive, and in that part of the Dominion it has been probably one of the wettest Novembers on record. Elsewhere throughout Canada precipitation was below average except in small sections of the North-west Territories and Manitoba, where it was very slightly above. The greatest amount below average was over the Lower Lake Region and the Georgian Bay district, Parry Sound, reporting 3:0 inches below, Southampton 2:7 inches below, Toronto 2:1 inches below, and Kingston 2:0 inches below. In the Province of Quebec the amount below average was about 1:5 inches, but in the Maritime Provinces the amount below average was generally quite small. A heavy fall of snow occurred over the Georgian Bay district on the 4th, and another one in the Maritime Provinces on the 12th, but the snow soon melted, and at the end of the month there was practically no snow on the ground in any portion of the Dominion.

#### TEMPERATURE.

The temperature was from average to 1 below in the Maritime Provinces, but elsewhere throughout Canada it was above average, and in nearly all localities to a large amount. This was strikingly the case in the Territories and Manitoba, where the average was exceeded by from 15 to 20. British Columbia and Ontario were also considerably in excess of the average.

The Highest and Lowest Temperature in each Province during November, 1899, were:

British Columbia,	76 0 on 13th at Quesnelle.	8 0 on 30th at Barkerville.
North-west Territories,	65 0 on 9th at Macleod.	9:0 on 30th at Kneehill.
Manitoba,	65 0 on 15th at Aweme.	> 0 on 2nd at Hillyiew.
Ontario,	70 0 on 14th at Sprucedale.	=4 '2 on 2nd at Upbinds.
Quebec,	53°5 on 9th at Richmond.	—5 ·0 on 13th at Brome.
New Brunswick,	63 9 on 1st at Moneton.	2 bi on 15th at Sussex.
Nova Scotia,	65 0 on 1st at Yarmouth.	18 0 on 28th at Picton.
Prince Edward Island,	61°5 on 2nd at Summerside.	14 Sep 28th at Charlottetown.

#### ATMOSPHERIC PRESSURE.

Atmospheric pressure was from average to 0.970 of an inch above in the Lake Region and the Ottawa and Upper St. Lawrence Valley, and below average in all the large remaining portion of the Dominion. The amount below average was very considerable from British Columbia to Mann da and ranged from 0.10 of an inch in Manitoba to as much as from 0.23 to 0.26 in, in British Columbia and the Territorie. Eastern Nova Scotia was as much as 0.10 in, below average and St. Johns, Newfoundland, 0.11 in, below.

#### BRIGHT SUNSHINE.

Bright sunshine was below average to a small amount over Vancouver 1.1 al and the maintaid of British Columbia and above average in all other parts of the Dominion, except at Winnipeg, where it the appears to have been slightly below the average. The greatest amounts above average were recorded at Britleford. Indian Head and Brandon and the largest amount below occurred at Agassiz.

	Amount.  Jafforence: In in Ary rage.  Mowreed fall in modifie.  No of Fart day.  No of Part day.  A drown:  A drown:  Land day.  A drown:  A drown	Color   Colo	# 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
ITY OF WIND	Party and distributed and dist	77   2   1   1   2   1   1   5   1   1   1   1   1   1   1	2
N VFLOOT	C. Total number of hours		- 826-8588
DIRECTION OF WIND PROM	Z' M.'		□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
	X, E,		
nH	Hent tomperate Downstate Library and the Mean amount of Mars to the Mean amount of Mars to the order of the Mean to the control of the Mean to the Mea		ಸಾಗಳಲ್ಲಿ ಪರಿ ಪಡೆತ್ವ ಪರಿಕಾರಿಗಳು
	Lowest. Tente. Acan unity renter	10 10 10 10 10 10 10 10 10 10 10 10 10 1	28/20/20/20/20/20/20/20/20/20/20/20/20/20/
Trmperature.	Total average. Total average.	THE COURT OF THE PROPERTY OF THE COURT OF TH	230 20 20 20 20 20 20 20 20 20 20 20 20 20
	Emge. Mean.	n v xns n nn r srene-2	270-180-1
PRESSURE.	Mean reduced. Highest. Lowest.		2
Eog (	Latitude N. Elevation above Latitude IV.	2.	200 200 200 200 200 200 200 200 200 200
	STATION.	Marsh Coleman.  Melling and Me	A William History Malainine History Malainine History Malainine History Market Collectory Market Collectory Market Market Physical Market Malainine Malainine History Market Malainine History Market Market Malainine History Market Market Malainine History Market

	11-0 -0 11-11-110 -000 00 000 00	. 0000 40044 (Mnomno 21 0:0 14 0500 00001:00000000 00 000 0
್ಣಹ ರ ಕೆರ√ –ಣ ರಥವಾಗಿ	-en: ,eu eee ee	V 2 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
H= 11 H+ 6 H+	रतिक च्या कडत <del>च</del> या	현황문화 프로프스스(지금스)((한환원학원으로 본원 1.000 프 
38		# # # # # # # # # # # # # # # # # # #
388	프로 : (취임 : : 15 위 : 15 ) 로드로 : (주요 : : 16 위 : 15 )	
148		1. 1 1111 16.5 G. REPSERMICHAGESSES (AC. 1 870 P. 1111)
de'e ( i i i le ce e i le ce		
	**	# 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	- [점점 11 : 1호 · 1호류 · 1]	
		1111- SANGE EN   F. 11 - 111 - 111
T88 to (88 (187)	81.881 B 1	୍ର ଜଳକ ମୁଲ୍ଲୁଲମନ୍ତ ଜଳା: ଷ୍ଟ୍ରେକ୍ଟ୍ର
Twe =   St.   =	51° :	1.878 <u>277</u> 4-991 (47. m.,59.
	75: P: P: P: 4:	[158] \$P#\$quagua [65]   50   50   50   50   50   50   50
**************************************	x	- (849 - 44 <u>8</u> 9997 ) 58 - 4 (198 <sub>1 )</sub> - 87
30 H 1714 12 1 1 2		부하러는 현대하옵션으로 우두는 소 THA A A A A A
1-9 E E E		### ##################################
	1	1000 1 4855 TOOL TO THE TOOL TO THE
		THE HAZERSTEN FOR HELD OF HELD
		- ^ : TM부 : 경도중화에 무슨 : 원칙 : 시 : 구시 : 원론 : 최본 : - 
	78:::: 4 . : 4	7 1 1 5844 A.
		Fried Community and the state of the state o
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5-5 - 2.1-2 5.5	
		12   12222200000000000000000000000000000
. <u>29 1</u> 1 2 1 1 2 1 1 2 2 1 1 2 2 2 2 2 2 2		7: 000 - 00 - 1
Tes + ( 25   10 - 1   10 - 1	Tage or reer as	PREZEZ PEZZEZ/172425E120- (10) - 1111 E
	্নাত্র হল ব্রহত হল ভুট্ডুই ছাধ ক্ষেণ্ড এক চ	
	4 g 1 tr 0 - 1 - 1 - 1 - 1	2007   2007
- 88 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	8848 EB 6 8 8 6 1	
• 82 8 188   E8 1 E24E	#### 82 8855 84	[38898] [38988879448898488 [31]
gi: li:: li:: i:	- \$48 E E RF EFE	
similar.	- 482   11   25   11   11   26   11   11   26   11   11	1
	그 궁중의 눈 눈 눈을 걸 하는 그 날 때	- 1 11 11 11 11 1 1 1 1 1 1 1 1 1 1 1 1
	888 : 185 988 : 196 97	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
<b>.5</b>	292129 2/21	Litti aaaa 73 allalla Hilli
= 15 15 15 15 15 15 15 15 15 15 15 15 15	<u> </u>	塞  護   日
- 827782272225555 : 25	축단함교육무성함으로등 4 시간 전략 - 중성용성당 4 등성도당당 4 4 등 8 등	を作る者の主義に担当時代もでしたができられるでも、これを対する話すも の変更がなたる表表を対象できたが、これではなったにはいないによったがある。
- 학교육등로의용으로으로 나는 -	2898-8545-849FE	55655255555555555555555555555555555555
N. W. Tentroures := Con   Cambridge Mutter   Part	8881818788831888	
	Manuchen. Minneden. Minneden. Minneden. Sex. Alban's C. Avenro ext. Alban's C. Avenro ext. Alban's C. Avenro fortuge in Pratric fortuge in France	Harley bury  Sudden's  Sudden's  Sudden's  Substantial  Missumine  Missumine  Missumine  Missumine  Missumine  Port Arbitat  Port Arbitat  Missumine  Miss
N. W. Trentrouns:—Canadata Madeal Madeal Madeal Material Markwyteling For Singlen Almecha Markwyteling For Singlen Markwyteling Markwyteling For Singlen Markwyteling Markwyte	Awer confident fatur	
ton of the control of	Section 1 Part of the Part of	Helitop hery Survano S
mings rrow rrow rrow rrow rrow rrow rrow rro	Minnedos Wimbiedos St. Alban Fort O-ba Emerson Portuge I Portuge I Portuge I Brandon Remodon Remodon Remodon Portuge Restente Resetante Hollyen Restente Resetante Hollyen Restente Resetante Hollyen	Warner State of the Control of the C
KERESERRESERSERSERSERSERSERSERSERSERSERSE		Britisp incepanies in the property of the prop

ಹ	
5	
_	
ت. ـ	
坖	
<del>^</del>	
Ξ	
<u> </u>	
~	
ž	
-	
4	
=	
3	
3	
C.	
-	
$\overline{\overline{}}$	0
	3
Ž	900
$\stackrel{\smile}{-}$	
Z	100
Ξ	ż
3	
Ĩ	
	400
=	ŝ
Ξ	-
-	7
$\stackrel{\sim}{=}$	~
٠,	1
Ź	
0	
Ξ	
7	-
STATE	000
-	. tions
1	÷
	٠
NOLLVILL	
$\equiv$	_
=	1
PITAT	×
-	3
Ξ	
$\tilde{z}$	_
÷	3
Ξ	-
_	-
AND PRE	1
1	1
,	A company of the company of the form
Ξ	
NI	1
=	
٠.	
<u> </u>	
_	
Ξ	
7	
==	
-	
=	
EMPERAT	
_	
e.4	
-	
7/	
- 3	
25	
-	

ı		Zo. of Fors	Copone acteooneconaccame.com cocheca copamicadocemum rectorems
	SIHA	No. of Auroras	ე იტიკი გაითულითია იმიად მოფლით დამერიანიანია დამიმერია ე იტიკი გაიფით რამამაშია იმიადან იმი <b>მიანე</b> ბანის მოფლიტება
1	o turr	synbaind to oV	ත නිවතිවය උත්තත්තින්වනත්වනත්ත්ත හත්වයිනවනි. තත්වෙවිනත්ත්වන්වේ එයි.එම්සිසිස - කළමුවල වුවේම්ස්තර්වන්ට කළමුවලට කළමුවලට කළමුවලට කළමුවලට අදුරුවලට කළමුවලට
		dinom ni Days with '01 or n	- 82825 48888 8848778999 FRESHERT - 88,888886868886 8878888
	ATEO	поп Ауставе. Пад театура	4 H888% 85186 H888831498 808458 124 80.0000000 0004584
	PRECIPITATION.	hillyrence	- TEST 1 1977 THE STATE OF THE
	PRE	Amount.	- chock -checophancathen - econe - economicate - emphicial
	ź	-ib lune offell most noiteer	2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	Y OF H	zir-olaz	
	VELOCITY OF WIND	Men mules	
	-	sanon po	. S. E.E
1		្រះ វេត្តជាពេលប្រភព	· · · · · · · · · · · · · · · · · · ·
0	171	Z' M.	HE HE HE HE SET STREET HE
and a	DIRECTION OF WIND PROM	A	「「「「」「「」」「「」」「「「」」「「「」」「「」」「「」」「「」」「「」
	W:XI	N. '8	. # # # *** #7145 + . # # R R R # * * * # . # . · . · . 조커로프롤프웨
at .	30.3	ŝ	- 나는 그 보다 (100mm) - 나는 가는 가는 다른 사람이 되는 사람이 되는 사람이 되었다. 그 사람이 목표하여 취임하다.
	CUIN	34.8	The state of the first of the f
707	] HRF	.a	
		Z' E	도 제공합 : : : x 여러 (유기주로병 : 유) 유 로 ((기원 : 11 전 ) 원 : : : 사이트플라설팅에
		7.	
,	letel	Zo, of day complete,	
	30	Mean stanount -	
	-tiJJ	ometrest. Seitzler nest. Vibim	
	jo ati	тапат Меза, сепрета Помроивъ	
		Theb maK	
5		Dute	a apanagagagainnaashkaa kaanaa kaanaa aaaa aaaa aaaa aaaa a
	8	189701	u aasamaaszuruszanaannan nannaan masansaansaansaan saareta
ŝ	Temperature.	-iju(I	
	RMPR	Yearsobservit.	<ul> <li>보통합의 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등</li></ul>
in a	Τ.	trom average.	Distance of the property of th
		ээнэгэйіЦ	- c+c++xc*xc;cc;iv:+cx+:i+-:xccx;;;cxx+c+ci::nkinoxx +cc+=exp
		Меап	· 数:数据通讯的发展中央设计的设计,并通过的企业,由自己的企业的企业的企业的企业的企业的企业的企业。
		[gunke	- 11:2:: - 1:: -
:	E.	18970.I	
1	PLESSUL.	Hoghest.	
		$M_{\rm contration}$	
-	11.15	Elevation above Jevel, in tert.	
		. A shutigns.I	サンといいとは企」である対当的も大学にはは上さればいます。 いととグラテザラミラとととはなって大学をディックラランテララフマディというとははながはデンタンとは、他科学はなどは と
		.Z duritud	기가 자료를 받는 것으로 가는 하는 기가 되는 기가 되었다. 그 기가 되었다. 그는 기가 되었다.
Commonweal			
-		2	
Fact State And		2	8 Sept. 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Service This		1 4 2	independent of the properties
-		Ε,	The state of the s
1			- Indianal control of the management of the transfer of the control of the contro

* #-=	400mmon00	00 11 +- 01 1+ 01 / 1 / 2 C	222	20	
20 245			222	-3.5	-
28 E2E	22555H258 - 2255-247	2222234 AN 222234 AN	212	25 25	
	84076-488	9##6/#9#   -98	825	35	1.1
Fag : : 040	新せが145円は38 11 1875 2 1 1 1		=	5.5	7
-TTT : : :::'''	FF77 -111	TT TTEST -71 :	= 11	7	=
385	ARRALPHER nonnonne	49548668 1751 ***********************************	りょご ロガス	17.25	1-
77" !!!!!					
	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	STAAN BEESS	# H # H	Ž≱ : 1 ;; ≤™	2.4 N.5
- Hin ini il	2015 S.	29 26 >	= : 5 : .	52 :	=
	- 146-5111				
	524.11	æ₁- = = = 1	50	įΞi::	
3.5 : : : : : : : : 3	88843 .8	88788 FB	5:8	8811	2
42 i : 9 : 8	9121	K34-= + :- x . :	<u>;</u> . =	÷	ĉ.
58 :: E:5 - 5	# ' ½=4	_ 豊新性を 約5::.	Ē.8	** F1 : *	2.6
%° : : : : ° : °	三年雲子名 日本	<u> 5</u> 8282 25	8 0	년추 · : :	10
20 :: 조 : 5	mng⊀q :≓	22067 E	을 im	*** ::	.5
45 H P 10	a a (ran ) in	36=64   M4   . :	şi ;≖	23∞ : : .	:
nn : 'à e		5848- tv		°= : :	ē
-m:.:: m:.e	1-1-2:1.	Hage setting	:: <u>-</u>	76 Z	-
	source : in	/ <u>EEEE 25</u> .	≘ :⊓	2월 :	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	연구성상당 11.00	84444 48 E	9 . 5	5.21	1 ~
	. 1.1 1-7@61-1-1	TWGES	: (3	₩ .	1.7
	Tili:	Ties xies . Ties	4	- 1-	
; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	P : 1 7 - 1 .		- 1		
: : <u>::</u>	· Handelon Tarker	iff Carriers	: :		
1.111	20 1 20 1			:: :	
→ 11:::: 1:=±	24E   34488	- BEEEEEE     68 -	2=5	27	-
== : : :====	XXPULLEEE	######################################	448	?? <del>!</del> . ∶	7
, <u>22</u> :::::::::::::::::::::::::::::::::::	-0000000000000000000000000000000000000	SSEENSON SON	= 53 A	8 <b>9</b> :	12
TABLE HEER	2.2		e= 11:14	71-	2.1
25 : 240%	/ 0 0 0 / - 2 0 0 0	accepton .ax	2-10	0 5 : 9 9	-
· 111 - 22 - 111	70007-000 708032-000 8648-1111	99501101 176 98 20144 91	9.9.9 5.1.1	5 T 51≢	-
. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		20 04304 1411 40 04304 1411 80 50 04 04 1411 80 50 04 04 1411 80 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	= 11	101	_
		1 200207000 100	907 888	4. 50	1
* 88 1 1 8 8W	manaa da Yakii	-KESH=2=   HE	898	88 111	1,5
gillini " ž	7284 - ::	3680	等 - :		1-
Timinin S	445 ÷ 111	668=	Ŧ.	≗ : : 5	3
1	₹45 £	8598	Ξ.	8	3
	585 5 938 5	8988 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	2 .	8 1	8
Fir::::::: 5	ลอก ก็ไว้	asas - ir ir	₹ 	Ēi '	ā
	Entrata :	BRRS - SAA - SEE - 1	4:-	25 : ·	Ε
- 25 25 25 25 25 25 25 25 25 25 25 25 25	** ** ** ** ** ** ** ** ** ** ** ** **	884955459555 84050-55555	E74	215 RES	÷
	80.88884#6 80.88884#6	영흥G명왕병병등등등등등 연료왕동강의 _ 본동당 주변동 병명으로으로의 교육보다고	525 525 525	명등(2 등) 기술 기술 등	â
* 25 5 5 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	도막=도=스크육달	##0404040404	===	######################################	1 -
red) The single state of the st		그런데 별 4			
Prince of Prince					
		will: salata	. 1	a 1 a a	
Sorti.	Part of the state		E STATE	HENDERS HENDERS	25
Quenac-Continued)  - Bourd te and the Continued of Anticord, W. Pr. Anticord, W. Pr. Anticord, M. Pr. Anticord, S. W. P. Int. Anticord, E. Pt. Ilia Rocks.  - Reference of the des Manches of the des Manches of	New Jathysmick: Fredericton (Chathen) Grand Manan Strand Leptran St. Julia Dialbonso St. Stephen St. Stephen St. Stephen St. Stephen St. Stephen	Max, Switta Sydnia Sydnia Time Virtue Dort Laffins Port Laffins Of Charles Sydnia Sydn	P. E. Island: Cherlotictown Summerside Damilton	NEWFOUNDLAND: St. John's Channell Channell Mannell Mannell Mannell Point Point	Prospert
Straden g	May Bruckerrore, 15 or 60 (Chrushelm 15 or 70 (Chruck Manna) 14 or 15 or	Nwax Scourt     Solida	75 KH	MACCAL.	4

# PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c., DURING NOVEMBER, 1899.

		I	laineai	L.			Sno	WFALL.			
STATIONS	Amount m melies,	Days of or Over.	Fair	Heaviest Fall in Month.	Date.	Amount in inches.	No. of Days.	Heaviest Fall in Month.	Date.	Thunder and Lightning &c.	
Phitish Coll Mela Goldstream Lake Vancouver, Royal Oak , Langley , Namanne Albern , Cumberland,	15 82 15 07 9 33 14 59 16 33 26 47 24 29	92 25 24 25 24 26 27	87-6218 43	3 35 1 78 1 24 1 42 2 55 2 67 3 11	30 29 29 17 21 23 13						
N. W. TERRITORIES— Sulficents Beaver Hills (N.E.) Immsful Coutts Crestent Lake	0 05 0 02 0 06 0 63 0 16	1 1 1 1	278 278 275 27	0 05 0 02 0 06 0 48 0 16	28 8 16 5 28	3 0 0 5 2 7 1 0 2 1	2 1 2 1 2	3:0 0:5 2:7 1:0 2:0	9 20 9 29		
Maxirota Turth Mountain, Clearspring Harthea Selkuk Morelin Cartwright Rapid City Pontoina Crossing Onkionik Norquay Belmont Delorane	0 82 0 55 0 25 1 52 0 50 0 68 0 80 0 79 0 79 0 28 0 50 1 15	3 2 1 4 1 5 1 2 2 1 6 3	2011-05-4-8-6-2-9-6-7-9-6-8-6-8-6-8-6-8-6-8-6-8-6-8-6-8-6-8-6	0 50 0 43 0 25 0 50 0 50 0 80 0 79 0 68 0 28 0 33 1 10	16 16 9 16 16 16 16 16 16 17 16	0 3 8 0 8 0 3 0 1 0 2 0 0 1 5 0 0 3 1 0 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0 3 3 0 4 0 3 0 2 0 1 5 2 0 2 0 4 0 3 0 4 0 3 0 4 0 1 0	30 10 9 17 10 10 9 10 9 10 9 10 9 9		
ONTAILE  N. Williamsburg Grotzerown Grotzerown Grotzerown Grotzerown Grotzerown Orangeville Dutton Scarboro Annota Einstalle Spartow Lake, Wyoming I Vandig Parma H artsylle Cr widon Wooden Chorty Valley Lanssbowne Mooden Chorty Valley Lanssbowne Mooden Chorty Valley Lanssbowne Mooden Chorty Valley Lanssbowne Mooden Lanssbowne Mooden Fort Borwell Adden Doodlewn Lanssborne Fort Borwell Adden Doodlewn Lanssborne Fort Borwell Wattorn Urest Forty Urest Princeton Watford Willon Grove, Roblins Mills Tokelo Deer Perk Elem Eintsmorte Prov delice Bay Kreav	2 30 0 71 1 86 0 86 0 86 1 95 1 02 1 02 1 02 1 03 1 02 1 03 1 02 1 03 1 03 1 03 1 04 1 04	0.8600000 860000000000000000000000000000	84 T T T T T T T T T T T T T T T T T T T	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 3 4 4 4 1 1 1 1 4 4 4 4 4 4 4 4 4 4 4	2 0 1 5 1 6 1 5 2 0 0 8 4 0 0 5 0 5 2 0	1 2 2 3 3 3 3 3 2 1 1 1 1 1 1 1 1 1 1 1	1 8 1 0 2 5 1 5 9 0 1 7 1 7 0 8 4 0 1 5 1 7 1 0 5 1 7 1 7 1 7 1 7 1 7 1 7 1 7 1 7 1 7 1	11 11 11 11 11 11 11 11 11 11 11 11 11	Thunder on 18th. Thunder on 19th.	
New Party-wick Pour Escumunic.	- 1-	6	20	1.53	2	0.3	3	0.2	23		
Novy Scotty - Fort Morien	. 83	11	19	0.94	13						
P. I. Israni - Minnay River.	. 3 16	13	17	0.91	7	×-					

#### Aurora recordea -

Where the class of a crove is noted by the observer, it is given, (I) being the brightest, (IV) the publist in brilliancy.

- 1. Savanne.
- 2. Savanne: Cannington Manor, IV.
- St. Anne, Iv.; Chicoutimi; Aweme, III; Red Deer, II; Savanne; W. Beaver, Hills, II. Father Point, IV; Barnardo, IV; Tagish, IV.
- 4. Gravenhurst, IV. Aweme, III: Muskowpetung Prince Albert, I: Minnedosa, IV: Battleford, III: Barnardo, IV.
  - 5. Savanne, Barnardo, IV.
  - 6. Savanne, Minnedosa, Father Point, IV.
  - 7. Savanne.
  - 5. Cannington Macor, IV.
  - 13. Swift Current, IV.
  - 21. Moose Jaw: Tagish, IV
  - 22. Gravenhurst, IV; Red Deer, III; W. Beaver Hills, IV; St. Agathe.
- 23. Gravenhurst, IV. Chicoutimi: Muskowpetung, I: Duck Lake, 111; Rat Portage, Father Point, III; Barnardo, II.
  - 24. West Beaver Hills, IV.
- Chicoutimi, Awene, III; Emsdale, IV; W. Beaver Hills, III; Pembina Crossing, III. Prince Albert, I; Swift Current, IV. Barnardo, IV; Cannington Manor, IV.
  - 27. Pembina Crossing, IV: Prince Albert, II.
  - 28. West Beaver Hills, IV; Shoal Lake,
  - 29. Swift Current, IV. Father Point, III.
  - 30. Red Deer, III. Minnedosa, IV: Father Point, III; Barnardo, III.

#### Thunder reported on-

- 5. Bermuda.
- 12. Yarmouth.
- 18. Sunshine.
- 19. Wiarton.
- 20. Lakefield.

## PROPORTION OF ERIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF NOVEMBER, 1889.

#### HOURS ENDING

													-				
		S semi.	6 10.111.	: i. ii.	× 4.10.	9 J. Mil.	10 а.т.	П а.ю.	North	1 pent.	in boni	: 1cm	4 peni.	5 pem.	e bain	ii.	x b.m.
Victoria					0 00	0.08	0.20	0-16	0.16	0.21	0.19	0.15	0.08	0.02	0.00		
Kuper Island					0 00	0 0.3	0.45	0.17	0.16	0.20	0.24	0.21	0.08	0.02	0.00		
Agassiz .					0.00	0.02	0.10	0.11	0.16	0.16	0.14	0.06	0.04	0.04	0.00		
Battleford					0.13	0.38	0.52	0.58	0.60	0.49	0.45	0 40	0.42	0.00	0.00		
Indian Head					0.00	0.05	0.21	0.48	0.58	0.56	0.60	0.56	0-15	0.01	0.00		
Brandon					0.01	0.20	0.31	0.51	0.48	0.58	0.60	0.52	0.43	0.01	0.00		
Winnipeg.					0 (1)	0.23	0.26	0.32	0.35	0.35	0.35	0.36	0.35	0.16	0.00		
Durham .					0.00	0.03	0.12	0.20	0.21	0.20	0.22	0.18	0.19	0.11	0.00		
Woodstock.					0.02	0.26	0-19	0.26	0.32	0.57	0.31	0.38	0.32	0.13	×		
Toronto					0.08	0.30	0.34	0.33	0.29	0.38	0.35	0 40	0.25	0.10	0.00		
Lindsay					0.08	0.19	0.26	0.30	0.31	0.28	0.30	0.28	0.26	0.10	0.60		
Barrie					0.02	0.14	0.27	0.33	0.34	0.31	0.32	0.20	0.09	8	e 00		
Kingston .					0.11	0.32	0.31	0.30	0.32	0.35	0.28	0.29	0.28	0.09	0.00		
Ottawa					0.07	0.26	0.35	0.32	0.31	0.33	0.31	0.29	0.26	0.08	0.00,		
Montreal.					0 07	0.20	0.27	0.29	0.34.	0.36	0.32	0.35	0.11	0.00	0.00		
Fredericton				4) (n)	0 22	0.32	0.36	0.40	0.41	0.45	0.43	0.37	0-13	0.00	0.00		
											1						
		Victoria	Kuper Island.	Agassiz.	Battleford.	Indian Beat.	Bandon.	Wmmp-g.	Durham.	Winnisterik.	Toronto	Lundsay.	Barrie.	Kingston.	Ottawa.	Montreal.	Fredericton.
Mean proportion for mouth  t Constant sunshin		<sub>k</sub> 0-13	0 14	0 00	0 41	0.36	u 41	0 29	0.45	0.26	0-29	0-25	0 21	0.28	0 27	0 29	0:3
Difference from average .		(#)	05	09	+ 13	13	+ 0-13	0 06		01	01	+ 01	± 03	+ 05		:00	0
Maximum daily amount		0.65	0.63	0.77	0.85	0.76	0.90	0.92	0.75	0.94	0.90	0 94	0.63	0.96	0.91	99	0:9
Date		4	11	2	15	5	25	1	7	12	12	12	23	12	3	2	1
No. of days completely clor	ided.,	12	15	21	10	9	9	14	15	1	5	10	9	10	131	10	i

139

# OBSERVATIONS AT NORWAY HOUSE, N.W.T., 1899.

Latitude N. 53° 58'. Longitude W. 97 52'. Height, 730 feet.

	MEAN	Mean Pressure at 32 .				Темге	PLECT CALLOX.				
	8 a.m.	6:28 p.m.	Mean.	8 a.m.	6 28 p. in.	Mean Max.	Melon Min.	Mean Daily Range,	Monthly Mean.	Total Amount	Depth of Snow
	III.	111-	111.							m.	sti.
September	29 17	29 15	29 160	46 4	49-1	76.3	10-1	16.2	45.2	2.74	
October .	29 10	29-12	29-110	35.5	37 1	42 6	31.3	11 3	36.9	1 06	8.5
November.	29 69	29 08	29 085	26.6	28 0	33.7	21.9	11.8	27 5	0.70	6.2

Note. - March to August of this table was published in the October review.

	Direction of Winds From										f. 04° ND,	Ayot: Cro	ş			
	×	N. E.	ಚ	<u>X</u>	zi.	. W. W.		N III	Cahn	x ii	67.5 Fran	z į	\$1 \frac{1}{2}	No. of	Thunder	Vurota.
March	s	12	0	0	7	5	5	.3	22	1	ſ	43	;;;)	0	0	7
April .	6	14	2	1	ς.	6	G	4	10	П	ī	30	59	()	0	->
May.	6	16	5	::	11	-	4	3	7	П	11	40	42	1	1	1
June	4	17	×	7	2	10	1	2	9	П	11	315	46	()	1	()
July ,	8	10	6	0	G	9	12	2	9	11	11	36	41	0	8	1
August	4	3	4	1	14	10	4	G	7	11	11	50	59	0	1	12
September .	9	.5	7	5	11	7	4	5	7	111	П	4:9	53	1	2	4
October	10	10	0	8	3	10	10	4	7	111	11	79	72	0	0	3
November .	s	11	6	9	133	14	:;	1	.5	11	11	72	80	3	()	2

## FORECASTS FOR NOVEMBER, 1899.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 14 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 930. These were divided as follows:-

		VERHIED.								
Destine).	No. Issued.	No. Pully	No. Partly	No. Not	Percentage					
Manutoba	93	7).	11		87 6					
Lake Superior	110	75	29	6	81-4					
Lower Life Region	113	91	11	8	86-7					
Georgian Bry	113	\$4()	11	9	85°8					
Ottawa Valley	500	7.4	1	12	84-4					
Upper St. Lewrence	90	73	4	13	83:3					
Lower St. Lawrence	96	733	18	5	85-4					
Gulf	113	93	15	5	88 9					
Mardane Provin	112	90	15	1	89.7					
Terminal Control of the Control of t	950	7.1%	121	68	86 0					

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

The storm warnings and for easts for November were issued by Forecast Official B. C. Webber.

R. F. STUPART,

Director,

Meteorological Office, Toronto, 23rd December, 1899.

# METEOROLOGICAL SERVICE, DOMINIOR OF CANADA.

# 4

VOL. XXIII

DECEMBER, 1899.

No. 12

#### INTRODUCTION

In compiling the present Review the principal data made use of are the telegraph reports of observations received at this office for the purpose of weather forecasting, and reports by mal from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

#### REMARKS UPON THE WEATHER.

The weather of December, though departing in the aggregate little from the normal, excepting in the temperature, which was above the average, showed many local departures. The snowfall in usest districts was light and excepting in portions of Ontario, Quebec and the Maritime Provinces, there was little upon the ground on the last day of the month. In many districts rivers and labes were frezen over unusually late, Several heavy gales were reported, these occurring more especially in Ontralo and the Maritime Provinces and causing some loss of life.

In British Columbia the weather was exceptionally mild, the temperature being above average: and although there was much cloud and the falls of rain or snow were unusually frequent, the precipitation altogether was about average. The maximum temperatures occurred at most places between the 22nd and 25th, and were about 54 ; and the minimum about the 17th, 27 at French Creek to 24 at Barkerville being recorded. On the 31st there was no snow upon the ground, and on Vancouver Island wild reses were in bloom in the early part of the month.

The weather in the North-west Territories was almost normal, and although there were some local departures they were generally unimportant. At Medicine Hat the temperature was 30% above average, and at Chaplin it was 3.0 above, these being the chi flexceptions. The maximum, temper duries, which were generally between 40° and 55°, occurred at most stations about the 12nd, and the ediminatin temperatures, which were generally between - 12 at Chaplin and - 37 at Lilmonton, were recorded generally on the 16th and 17th. Little snow fell until the last week, and on the 31st the \_coup.1 was only lightly covered. Chim ok winds occurred rather frequently, and the accompanying aigh temper curves soon incited the snow. In most districts there was much cloud

In Manitoba the weather was for the most part fine, mild and dry, the temp rature being above average, the precipitation below, and the amount of cloud unusually small. At Stony Mountain the temperature was 6.4 above the average, and at Winnipeg it was 5.6 above. The maximum temperatures, which were generally between 40° and 50°, occurred about the 22nd at most places, and the minimum temperatures, ranging between -17:0 at Portage la Prairie and +24:7 at Brandon, about the 3001. During the first three weeks the precipitation was mostly rain, after which some snow fe'l, but there was little on the ground on the 31st. Most rivers were frozen over early in the month,

In most districts in Ontario the temperature and precipitation were above average, but there were local exceptions, and at several stations in the south-western portion these conditions were reversed. The greatest departures in the temperature and precipitation above average occurred in a second northern Ontario. The maximum temperatures, which at most stations were between 50 and 561, were recorded generally about the 11th and 12th, and the minimum, which varied between 2.0 above at Peter 13th Lord - 42.5 at White River. north of Lake Superior, occurred on or about the 30th. Although snow tell upon several occusions during the month in southern districts, the ground was bare at most places on the 31st, but by corthern and eastern Ontario there was good sleighing by that date. A heavy gale passed over take Energy the ftt, cousing loss of life, and another a mally severe passed over the province on the 10th. As several, across in the southern portion some garden and wild flowers were still in bloom early in the mouth.

In the province of Quebec the weather was exceptionally mild, the term stature being as much as 7:1 above average at Chicoutium, and the precipitation, which was mostly snow, and also above average in most districts. The highest temperatures, which were generally between 50 and 60, occurred about the 12th, and the lowest, which ranged between - 4.5 and - 1990, were recorded generally about the 31st.

The weather in New Brunswick, though musually mild was exceptionally dull, and the precipitation, like the temperature, was at most places above average. The highest temperatures, which occurred generally about the 12th, were at most places between 50 and 55, but at Dalhonsie the maximum was 65.0°. The minimum temperatures, which ranged between 90 at Point Lepreaux and 27 at 8 assex, were reported from most stations on the 31st. At 8t. John gales occurred on the 2nd, 4th, 8th, 12th and 15th, the wind reaching a velocity upon each occasion of 42 miles per hour. There was not much sleighing until the last week of the month.

In Nova Scotia the temperature was above average, whilst the precipitation varied, it being well above average at Sydney, Port Hastings and Whitehead, and below elsewhere. The maximum temperatures were at most stations between 50 and 55, the dates of occurrence varying. The minimum temperatures, which ranged between -4 at Parrsboro' and 19 at Whitehead, were recorded generally on the last few days of the month. Several severe gales occurred during the month. At Halifax damdelions were in bloom on the 3rd.

In Prince Edward Island the weather was for the most part fine and mild, the temperature being above average and the precipitation average or below. The maximum temperatures were about the same as in New Brunswick, but the minimum temperatures, which occurred generally on the 31st, were higher. The ground was bare of snow during the greater part of the month, and navigation was open up to the 31st.—F. F. PAYNE.

## ATMOSPHERIC PRESSURE.

The mean atmospheric pressure was a tenth of an inch below average in Cape Breton, and thence west-ward the departure duminished until at Quebec it was just average. Westward from this across the Lake Region to Eastern Manitoba the departure from average was minus, with a difference of 0.07 of an inch in the Ottawa Valley and over the Upper Lakes. From Manitoba to the Pacific the average was generally exceeded, with the greatest departure (0.15 of an inch) over Saskatchewan.

#### HIGH AREAS.

Eleven high areas have been charted, most of which were extensive, covering large portions of the continent. Three of these showed a tendency to hover, two of them over the Middle Pacific States and one over the North-west. Two first appeared in the North-west Territories and passed south and east across the continent; one came from the extreme North-west States and dispersed over the Middle Atlantic States, after having nearly crossed the continent; two came from the north of Lake Superior and passed south-eastward to the Atlantic. The paths of the remainder were short, and two of the areas were absorbed by others. The most important area of the month was present during the last few days, and brought decidedly cold weather from the Rocky Mountains to the Gulf of St. Lawrence.

#### LOW AREAS.

Eleven low areas have been traced; four came from the North-west Territories or British Columbia, taking generally an easterly or southeasterly course, one came from the middle Mississippi Valley moving northeastward, one from Texas taking a north-east course, and one appearing near the New England Coast passed northward across the Gulf of St. Lawrence.

The mean rate of movement of the low areas was about thirty-five miles per hour.

No. I was centred over Missouri on the 30th November, over the lakes on the morning of the 1st, and thence travelled to Newfoundland, which it reached on the 3rd. It was generally attended by high winds and caused a fresh gale on the Bay of Fundy. No. 2 was centred over eastern Pennsylvania on the night of the 3rd. It developed quickly, took a north-easterly course and gave a fresh gale throughout the Eastern Provinces on the 4th and then moved to Labrador. No. 3 moved as a comparatively shallow area from Manitoba to the Lake Region it then increased in energy giving high winds and heavy local snowfalls throughout its subsequent course from Ontario to the more southern part of the Maritime Provinces. No. 4 passed across the North-west Territories and thence eastward as an ill-defined area until approaching the scaboard when a marked development occurred and a gale prevailed in the Maritime Provinces. No. 5 appeared off the British Columbia coast on the 8th; it moved to the North-west Territories, then to the north of Lake Superior where it dispersed. It was rather unimportant. No. 6 appeared over Texas on the 10th and moved north-eastward with quickly increasing energy and a strong gale with heavy rainfall prevailed in the Lake Region between the 11th and 12th; the storm moved towards James Bay and thence eastward with diminishing energy to Newfoundland. No. 7 seems to have formed over Kentucky and Tennessee on the morning of the 14th. It moved quickly northeastward with increasing energy, crossing Newfoundland on the 16th. It gave high winds and a general fall of snow from the Lakes to the Atlantic, excepting in the Maritime Provinces, where the precipitation was partly rain. No. 8 was of small dimensions and gave strong winds and a fall of rain from the Lakes to the Atlantic. No. 9 after hovering over the northern portions of the North-west Territories was centred over Keewatin on the 23rd. It then moved south-east to the Upper Lakes and then north-eastward

apparently dispersing over Northern Quebec. It caused a fresh gale throughout Manitoba and the Lake Region, No. 10 was centred over Alabama on the 23rd and then moved quickly northeastward, dispersing next day over New England States. No. 11 was first clearly defined as centred off the New England Coast on the night of the 29th. It crossed the Maritime Provinces there giving high winds, then passing to the north of the Gulf of St. Lawrence.

#### WINDS

In British Columbia the winds most in evidence were from between E. and 8, and no gale was recorded. In the North west the most prevalent winds were westerly generally moderate to fresh, but two moderate gales occurred. This prevalent westerly direction was also well in evidence from the Lakes to the Athantic. One fresh gale occurred in Manitola, one moderate and one fresh in the Lake Superior district, five occurred on the Lower Lakes, those of the 12th and 24th reaching the force of a strong gale. Eight moderate to fresh gales were experienced in the St. Lawrence Valley and in the Maritime Provinces. The display of storm signals was discontinued to Lake Stations after the 10th instant. The storms which occurred on the Lakes on the 3rd and 9th, were warned, but the gale of the 7th was not warned. In Eastern Canada six gales were duly warned, but the storms that were experienced on the 2nd and 8th, were not warned.

#### TEMPERATURE.

Temperature was above average throughout the Dominion, except in a few small sections, where it was just about the average, or slightly below. These sections were a portion of Alberta, the extreme southern part of Asiniboia, the extreme south-western part of Ontario, and in the neighbourhood of White River, in the Lake Superior District. From the Georgian Bay region to our Atlantic Coast the average was considerably exceeded.

The Highest and Lowest Temperature in each Province during December, 1899, were ;

British Columbia,	58 5 on 3rd at Port Simpson.	-24 0 on 16th at Barkerville.
North-west Territories,	56 0 on 22nd at Calgary.	-37 to on 16th at Edmonton.
Manitoba,	47 0 on 21st at Portage la Prairie.	- 24 7 on 30th at Brandon.
Ontario,	65 0 on 21st at Port Hope.	-42 5 on 29th at White River.
Quebec,	60° 0 on 12th at Brome.	= 19 ·0 on 31st at Brome.
New Brunswick,	65 0 on 24th at Dalhousie.	27 0 on 31st at Sussex.
Nova Scotia,	55 ·8 on 12th at Truro.	4 2 on 31st at Pairsboro'.
Prince Edward Island.	57 0 on 13th at Summerside.	5 ·2 on 31st at Summerside.

#### PRECIPITATION.

The precipitation was below average over British Columbia, Manitoba and the southern portions of the North-west Territories, below average over the Peninsula of Ontario, and in parts of Nova Scotia and Prince Edward Island, and elsewhere above the average. During the first three weeks of the month the precipitation was very largely rain, but during the last week it was in Ontario, Quebec and the Maritime Provinces nearly altogether snow. In British Columbia there was no snow on the ground at the end of the month; the North-west Territories and Manitoba had only a light covering, or in some localities none. In Ontario it varied from a trace at south-western stations to from 10 to 20 inches in northern localitie. In Quebec it varied from 2 to 10 inches, and in the Maritime Provinces from 2 to 13 inches.

#### BRIGHT SUNSHINE.

Bright sunshine was slightly below average at Victoria and on the Mainland, but at Kuper Island it was slightly above. It was slightly below average in the North-west Territories and slightly above in Manitoba. In Ontario the amount recorded varied from just about average to slightly above average. In Quebec, below average to the amount of 11 and in New Brunswick 7 below average.

c. : : - +

OF CANADA, DECEMBER. THE DOMINION (Registering Thermometering) with Stations not furnished \*NOLLY LY WIND AND PRECIPITATION Barometer not reduced to Sea Lowel. TEMPERATURE.

5 :: 5 5, 5 9 W.IND SEEST TRANSPERS test of thom: 12 | | | | | | Just pour 8 상당원임상상#환왕 93 8 :0 13 'AL 'X GN. 99229-**4**98 , e :1-. 0 • , (12. ) chapted, and the  $\sim$ nit exitition make powbeint yo un temberatura or L 22802883202 20028823502 1-002828502 115000 1 ē; 507 (13) SEEEEE E442245 # 18422 and avoid a top violation of the HRM4대학원원봉포유**병병**육 -8888282828888 -8888282828888 ಕೆ ಇತ್ರವ್ವವಣ್ಣ ಪ್ರವರ್ಥ N. W. 1 methodis.

Melbrine Hist.
Edinoution.
Particle Hist.
Parti

A		200 2011-11	000 01.18.8 NATIONAL 011 -00. HE
A	⇒ ⇒⇒ →⇒	15 m	999 9459911 1181555 41. 115151
### ### ### ### ### ### ### #### ######		Zm≘ Crestor this	TAM 작성용용하고의 보유보호활보다의 안난스 - 회에스트립트리
### 458	# 18 .	12.125	사용할 토었습니요요요 숙소는고답답장을 모으면 바이트 아니다.
### 198   18		428 49 844 9	
The content of the	1	4=8 888 888 8	888 4989469 Wedgets and
19			1.500- 0-14040 -000 10000 00 00 00 00 00 00 00 00 00 00
### 175 PE			1. 1 2. 1 2. 1 2. 1 2. 1 2. 1 2. 1 2. 1
### 1			areas areas and a second
	· · · · · · · · · · · · · · · · · ·		
	AM .	1 ::: =E E=!;i :	
### 15   15   15   15   15   15   15   1	and the second s		
			(HTR) [ 음마스웨이스의 [ [ [ [ [ 라이 ( ) 라드리 ( ) ( ) 의 ( )
			· · · · · · · · · · · · · · · · · · ·
T			で名可にはREE関で表示して、発表し、発力に表示して、発音した。
			한편하는 경영수동병문자 (인경우 왕은 남부의 남자의 이 원임, 44 원인
Column			그 19부기 기록한 출유하렴한 기회에 남한 1회에게 기계 나보는 기
### 15			Cheller Etable ( ) Estate ( ) entrage ( )
### ##################################			
######################################			
### 1			는 문학과 발생으로 다른
March   Marc		** :: : : = : : : = : : : : : : : : : :	Tilen Bees ja Tuurijijijeed ja ja ja
		4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	THE PERSON AND THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON
March   Marc			
### 12			
No.	그 및 그런 기원적으로 된 다	EX AMPRES DE	AL BARRESE PARAGRAM ALS L'ELES
The control of the	- 18 TE   TE   10   10   15   - 18 A   18   18   18   18   18   18   18	1588 955546 EA.	
1		5853 5786366 67	
- 1	9 6 68 MG . 5 55 - 9 6 68 MS . 25	7 / 5/10   0 / 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
1		교육무료 프랑스바닷트 1 ::	198 9103-124 1811-198 1-48
### 1	The form of our first the first		202 Nesenth Chestanna cos Nosens
### 1	୍ଷ୍ୟିକ୍ଷର ଅବସ୍ଥାନ କଥା		DIA TEXALORS ISSUED ASSESSED AND A REPORT
The control of the		의 설립 등 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
1	. T		mean walle in a war it is
1	- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ରୁକୁକୁ ରଚ	5555 55 55 5 <del>1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 </del>
#####################################		- 888 11111 St. St. 11111	8888 88 8 8 89 89
	oği∯İR ikti≟ikti.⊹to	425 : 25 184 : 38	는 : :
・対抗セライ報と連手にある。 ある。 1         4年日本日報報告におきませる。         カス名の主義をおきませる。         カス名の主義をおける。         カス名の主義をおける。         カス名の主義とは、         カス名の主義とは、 <t< th=""><th>199</th><th></th><th></th></t<>	199		
表示主义 (1985年)         2012年2月20日 (1987年)         2012年2月20日 (	- 원류일로우양우열및보충경수 중중 그		
	22222222222222		
N. W. I. KRITDRIKS S.—  Analond Manor Mandon Manor Markon Manor Markon Manor Markon Manor Markon Mar			
N. W. Lekktrone Authorition M. Natoletto M.		man de la companya de	
N. W.I. KRRI Chambago Mandona Photoson	Treek Some Some State St	Para Library Company	· 清晨年[編集] 自编注 # # # # # # #   1   1   1   1   1   1
T.W. Commence of the commence	HERE CONTROLL OF THE CONTROL OF THE		
スプログローコロージョットがは、 こうしんしゅん 単一コーコー こうしょうかい カーカー・カー・カー・カー・カー・カー・カー・カー・カー・カー・カー・カー・カー	MACHEN CONTRACTOR OF THE PROPERTY OF THE PROPE		
	Z SOCIAL PARAMENTAL VEN	ろった。 これを これを これを これを これを これを これを これを	○ ころなななようなものできる。

THE DOMINION OF CANADA, DECEMBER 1899 IN THE DOMINION O AT STATIONS E STATIONS WIND AND PRECIPITATION PRESSURE, TEMPERATURE,

Zot of Eugs

SETOTHA TO JOY

No. of Parr days

Heaviest fall throught.

. эяктэ УА шоті

Pifference

mour nousest

Fighest day's

Mean miles

ot ponts Logar number

'M 'N

Δŝ

ď

AU's

S' E. ъ. Z'E

Surrots , bandT to .oV

STORE TO TO TO MINY STRAIL

PRECIPITATION

VELOCITY OF WIND

WIND

Ξ

PIRECTION

Vo. of day completely cloudeds. lo Janoma malli buoli) Mean relative Ha-Dewpoint.

Altab mest

IsamurI a)n(I

Highest.

пиоду

ВапрЯ

Powest

Highest

Mean reduced

. Webuitgmad

Latitude Z.

Flevation above Sea Level, in teet.

IVIION

Trateobeervit. Гейтегенсе Геоп а**тета**ке.

Barometer not reduced to Sea Lovel

100-2022 ======= 0 0 0 0 0 0 0 1919242888 X 크리노트성운왕원 252.2522 2522 220259 8888888 888888 888888 S:14888214F 5333334 843.5489 000000 E.S. 70777 ...--------8547689884785888888 ARREST មិត្តស្ថិននៅជាជននៅ 28.28=48 N E S 8W. ě 0.3 33 × 4.9 8.48.48.8 5 9 2002112211 5555 FEE \$\frac{1}{2}\frac{1}{2 프리카드 프리카드 (1) 프리카드 ( 医复数结缔多结结络基础特 治治24458年 0--2|||-||| 5--2|||-||| 588552922 1 | 1 | 1 | 24 1 45 :465 : 19 09.1 12.1 255 258 388 8 53 69 30: 18 E E 30.00 8 856 축조건역도등모든등등로요를등등장보통되고학학교적임원보 등등관점을 수도 # 경험학조학환원보고면임을 \* x & & ~ & 8 | 4 | 4 | 8 | 88585151513 843484848 ಡ**ಿಕ್**ಡಿಕಾರ್ಕರ್ plantinally
Muchistock
Port Univer
Port Univer
Port Univer
Port Order
Port Or QUERC:
Moureal
Rebinond
BrozaChicourini
Extract
Chicourini
Extract Point
Point des Monts
Cape Offatte
Bioquette Odavin Ocousbee Winden Alto Godlingwood Collingwood NTARIO-(Continued.) Bognor.
Mitteside
Minteside
Orillia
Orillia
Civil water.
Beatroe
Gravenhurst
Habburton
Point Clark
Lington

0 :0 ::000	*000 ;000-	01:01-m01:1 0.E	-00	0171 ; -	٠
0 0 000	0000 0000 0000 0000	00000000 00 0000000 00	055	06 0	-
등 6 : 호텔	2224 8184	22×8538 22	233	22.5	19 11
9 8 15 8 16 8 16 8	2888 2588 2588 2588	######################################	2.45 2.45	52 S	. 50
~ c · · - c -		1101011 60	= = = 2	71   E	9
.m	1000 to 11	9597757 : : : : : : : : : : :	7 ' '	77 : 17	5
. මේ මේ. මේ . මේ මේ.	2555 .2655 	#####################################	818 4 2222	26 - E	§ •
	# = = = = = = = = = = = = = = = = = = =		<b>#</b> .	22	ż
61	e ₹7 + 'o : :	12 s 2 5 8 W	43	2 % : : :	5
	7 X X 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	E <sub>H</sub> <sup>o</sup> k	8 : :	- = : : : :	31 +
	+ io_ i i i i	010 40 E	- : :		:
			l- : :		:
8   2   2   8	8.624.	##8#8#S : · · ·	<b>₹</b> 855		. 62
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	####  £   #	<b>4</b> 2 x 21 − 0 2	Šīw¢		6 15
₹ ° 3 ′	20.28 to 10.	\$2.255 : · · · ·	활담하		9
9 9 6	293 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		5-1	: :	
, , , , , , , , , , , , , , , , , , ,	** : ::	<ul><li>6</li><li>5</li><li>6</li><li>6</li><li>7</li><li>7</li><li>7</li><li>8</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li><li>9</li>&lt;</ul>	2001		
8 2 0		#3.1800-0	50 <del>4.</del> 54	::	_
	F-85 - 6	88 a 8 a a 5 : : : :	124	무용 : 1 <b>*</b> #하 : 1호	1-
	36,44,5	257225 : : : : : : : : : : : : : : : : : :		: '	2
1 19 2 1 15 12 2 2 2 s		변류(* 변상 : : : : : : : : : : : : : : : : : :	570 F-49	: :	-
	4,50			::	5
3. 1	C1020 1-	15 x 5 x 5 x 5 x 5 x 5 x 5 x 5 x 5 x 5 x	= : :	8 55 55	
	1				
<u> </u>	9 : : : : :				
HHIII s	X 11 4 (10 4,0 5)		- : :	- !! !!	
•   [e     51 <u>#</u> 21	무섭요요 : 중요단의	227221 : 33 227221 : 33	555 x	= -	
<b>≅</b>		କ୍ଷିଟ୍ୟଞ୍ଚିଷ୍ଟ ଅନ୍ତ ଜଣ୍ଡ ଅନ୍ତର୍ଗ ଅନ୍ତର୍ଶ	555	조원 : 12	
9 : 1   1   1   0   0   0   0   0   0   0	4447-2 40XF	======================================	1 4 5 5 4 1 1 0	84 : 5	22
3 : : : : : : : : : : : : : : : : : :	합점하고 말답도당	2827E-2 : 22 :	222	80 8	7
. 2 : 8 : 2 : 8 : 2 : 8 : 2 : 8 : 2 : 3 : 3 : 3 : 3 : 3 : 3 : 3 : 3 : 3	28888 8888 2888 8888 7488 8888	68888888 : 888 68888888 : 888 68888888 : 888 68888888 : 888 688888 : 888 68888 : 888 68888 : 888 68888 : 888 6888 : 888 6888 : 888 6888 : 888 6888 : 888 6888 : 888 688 br>688 : 888 688 : 888 688 : 888 688 : 888 688 : 888 688 : 888 688 688 : 888 688 : 888 688 : 888 688 : 888 688 : 888 688 : 888 688	\$54 \$54	14 ± 1 4	21
1- 20	#85±8 9====	5882592 HE	200	25.25 ± 5	oc.
+ + + + + + + + + + + + + + + + + + +	+	##696##	444		ï
• 81 - 1 - 1 - 1 - 2 - 2 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3	99999 1695 8919	######################################	888 8 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	888 <b>8</b>	. <del>4</del>
411111111111111111111111111111111111111		- 4684 [ ] ] ] ] ]	19	<b>5</b> 1	83
ু । । । । । । । । । । । । । । । । । । ।	128	8358 : : : : : : : : :	2	- i	S1
	888	원원원왕 : : : : : : : : : : : : : : : : : :	69 19	8 : : : 8 : : :	54 4
-in	888 · · · · · · · · · · · · · · · · · ·	2552 2552 2552 2552 2552 2552 2552 255	8	8	30
= : : : : : : : : : : : : : : : : : : :	288	8888	08: 8:	8 : : : : N	8
: :8 : : :8 : :	₹5488888 <u>;</u>	5258 <del>2</del> 25 32	** : :	25 : is	151
• 222522212 288331x23	\$69333553 \$69335553	\$2525544342343 \$27545	883 883	55 55 55 57 55 55 57 55 55 57 55 55 57 55 55	25
	1500 T T T T T T T T T T T T T T T T T T				30.0
- 35622624 - 55936626	Pred-prices   Pred-prices	Mark Scott   1   1   1   1   1   1   1   1   1	. E. Island: Charlottelown Summerside	NEWEUTNOLAND 15 47 34 (Channell 47 37 (Channell 47 37 (Chan Norman 5) 38 (Amour Point Rid 28 (Point Rich 5) 42 (12 28 (12	85
Quenti-(vortinued) - Quentilori, - Anticosti, NII Anticosti, SW. Point, - Anticosti, SW. Point, - Anticosti, E. P Brid, Brid, - Brid	Waw BRYSSWICK: Predericion Chathan Grend Manan. Proint Laprena. St. John Pullorsto Pullorsto St. Stephen Manaton St. Stephen St. Stephen Manaton St. Stephen	More Scotts. School School Turn Turnout			Prospect
P. W.P.	¥ 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		<u> </u>		:
fr. W. W. B.	SWD don dan dan rpre	A STATE OF S	stary stary state	Pr. AN	
ne Me treos frees	Section 1		Ista irlott irmer nilto	Strang Strang Sour D	Speci
Querre-(('ontinued))  "Gap Maginion  "Anticosti, W. Pi  Anticosti, SW. Poi  Abilibi  "Anticosti, E. P.  Brit Rocks  Roberto  Perce  Fortar Anticosti (B. P.  Brit Anticosti (B. P.  B	New Bernswick: Prederictor Cluttern Grand Manan. Strink Lepreaux Strink Lepreaux Strink Ballouse St. John St. Stephen	Nova Scotia: Halitax Sidney. Turro Yamouth Pleton Port Bastin Out	P. E. ISLAND: Charlottetow Summerside Hamilton	NEWFULNDLAND: St. John's Channell Oupe Norman Amour Point.	Вкитра: Ргоярест.
	-				_ '

# PRECIPITATION AT STATIONS REPORTING RAIN, 8NOW, WEATHER, &c., DURING DECEMBER, 1899.

		1	Caineal	ı			8500	VI ALA		
STATIONS	Anomit in inches,	Days roll or Over	F.or	Heaviest Γall in Month.	Date.	Amount in inches.	No. of Days	Month.	Date.	REMARKS.
Birresii Corrantiv Royal Oali ; Goldstreim Lali Alberti ; Lampley Namumo Vancon et	m. 6 64 9 64 12 93 10 52 6 56 11 15	15 15 15 11 21	14 10 15 12 19	us. 1 50 1 54 2 56 1 70 1 67 1 49	20 21 6 21 20 21	m. 5 0 6 5 8 0 2 5 3 0 2 0	2 3 1 1 3	m. 3 0 5 n 1 5 2 5 3 0 2 0	15 15 16 16 16 15	
N. W. Francionis N. E. Beaver Hulls W. Rever Hulls Crescent Lale. Immsful Saltoonts Courts	R					8 0 10 3 2 5 5 0 1 5 14 7	7 14 3 5 6	2 5 3 3 1 4 2 5 1 0 5 0	12 12 2 15 2 15	
Manifola Delocane Rapid City Hartney . Nosquay Pembina Crossing Belinont	0.05	*1	23	0.03	21	5 3 0 2 5 0 3 3	1 2 4 6	2 0 0 2 3 0 1 5	1 2 17	i
Sheal Lake Mor len Oakbank Turtle Mountain	R					3 0 3 0 1 5	3 4 4 3	3 0 1 0 2 5	16 1 1	
ONI (MO)  GO E (100)  GO E (100)  Mallend George (100) Weoming Ariten Partia. Aurora Lion's Head Huntsville Doultov in Wattord Orangeville I vbridge Port Burwell Einselade Crowdon Cherry Valley Wooder Gentry Valley Vooder Gentry Valley Vooder Fort Fury Lansdowne Sparrow I. de. Dutton Oliver's Ferry, V rse Lanedoch, Door Park Elaru Elmusinore Providence Bay Princeton, Smith's Falls, Moetague Roblins Mills Sunslaine Warton Senttorn Wilton Grove,	0.797 ± 122 ± 61.9 ± 4.45 ± 61.9 ± 4.45 ± 61.9 ± 4.45 ± 61.9 ± 4.45 ± 61.9 ± 4.45 ± 61.9 ± 4.45 ± 61.9 ± 61.0 ± 61	0.000 X 0.000	23 18 19 19 18 29 18 29 18 29 17 18 29 19 29 29 29 29 29 29 29 29 29 29 29 29 29	0 40 1 10 0 96 0 108 1 108 1 105 1 106 0 75 1 106 1	2 11 11 11 12 12 13 14 14 14 14 14 14 14 14 14 14 14 14 14	$\begin{array}{c} 1115\\ 955\\ 956\\ 1200\\ 490\\ 180\\ 180\\ 180\\ 180\\ 180\\ 180\\ 180\\ 18$	6 5 15 1 4 3 6 6 6 9 5 5 7 5 4 8 8 10 1 4 9 5 7 5 8 7 7 3 4 4 5 5 16 16 16 17 7 9	6 0 0 15 0 2 5 0 15 0 0	00 024 15 4 4 15 6 6 14 4 15 25 14 14 14 15 25 14 15 14 15 24 15 25 14 15 14 15 25 14 15 15 25 14 15 15 15 15 15 15 15 15 15 15 15 15 15	Thunder on 1st.
New Protestwick Point Estimate.	0.79	6	23	0.46	25	1.0	::	0.4	15	
Novy Scotty Port Morien	4 13	13	13	0.94	3	7 0	6	3.0	28	
P. P. Israsio Municiv River	2 39	`		0.85	15	Proquen	t light «	11 /W		

#### Aurora recorded-

Where the class of aurora is noted by the observer, it is given, (I) being the brightest, (IV | I') fieldest in brilliancy

- 2. Gravenhurst, IV
- 3 West Beaver Hills, Red Deer, IV.
- 4. West Beaver Hills
- 5. West Beaver Hills, IV ; Savanne.
- 6. Pembina Crossing, IV; West Beaver Hills, Red Deer, IV.
- 7. Barnardo, IV: Pembina Crossing, II; Aweme, IV.
- 8. Minnedosa, IV; Pembina Crossing, HI; Treherne, IV
- 9. Minnedosa, IV: Pembina Crossing, IV: Awene, HI
- 16. Truro, IV
- 18. Hillview, 111.
- 20. Chicoutimi.
- 21. Huntsville IV, Chicoutimi
- Savanne.
- 26. Pembina Crossing, III; Aweme, III. Duck Lake, IV; Cockburn Isrand, Savanne, St. Agothe-
- Barnardo, III; Prince Albert, II; Hillview, IV; Pembina Crossing, III; Aweme, IV; Duck Lake, III; Savanne, Obnikup, Chennel Island, II.
- 28. Barnardo, IV; Truro, IV; Battleford, IV; Minnedosa, IV; Duck Lake, III; Savanne, Tagnish,
- Barnardo, IV: Battleford, IV: Minnedosa, IV: Pembina Crossing, IV; Treherne, III: Duck Eak-IV; West Beaver Hill, IV: Savanne, Oonikup, Channel Island, IV.
- 30. Minnedosa, IV; Pembina Crossing, IV; West Beaver Hills.
- 31. Battleford, IV.

 $_{\rm CS}$  ) by the first sunshine registered in each hour of the day during which the sunshine horizon in the month of december, 1896.

	115	

	Ę	:	00'0 7	= -	E - 5	10 a m.	: H	1	=	12.0	Ē.	Ţ.	5 p.m.	6 page	<u> </u>	∄ ∴ .c
Victoria				O (1)	0.02	- 12	0.12	0.25	0.2	0.15	0.18	0.05	0 (0			
K + -( I )				0.00	1 : - H	0.00	0.75	0.29	() · · ·	1.21	0.23	0.05	0.00			
A 2 . ~				k1 (10)	(1-6-1	0.06	n []	0.16	0.5	- 20	0.11	0.02	0.00			
Barrlefor						9.29	0.0	0.35	0.,0	+ 26	0.08	0.00	0.00			
Inh in Heat				(1-1)(1		17-1-4	0.22	0.32	(1 ]	++-1(+	0.36	0.05	0.00			
Beauton				ta lan		1.1	0.55	0.57	(1 1 5 5	0.51	0.45	0.19	0.00			
Withing &				()):	0.17	0.30	13 (31)	0.54	0.,0	0.53	0.55	0.50	() ()()			
Dimines					13 116	0.10	0.15	0.19	p = 0	0.10	0.21	0.22	0.12			
Woodstork_				`	O 11	11 9	0.2	0.35	0., 1	0.55	0.27	$\alpha$ 21	0.04			
Faconto				11.14]	11-11-	0.34	() , (,)	0.35		11.44	0.36	0.24	0.05			
Lindsov				`		0.,0	0.33	H (H)	0.15	0.27	0.11	0.07	0.03			
Barre				~		0.23	0.26	0.17	0.24	0.26	0.00	0.07	0.00			
Kingst or				0.10	0.1		ü., i,	44.,79	11-11	0.21	() *1°,	0.17	0.01			
Ortowa				(c. (d)		0.11	0-12	0.30	60.00	0.31	0.25	0.11	0.00			
M i real				0.11()	0.02	( 19	0.27	0.16	11 -11	0.24	0.17	0.02	0.00			
Problems of			0.9			0 _ 1	0.3	11.75	н;	0.42	0.38	0.01	0.00			
	Victor	1.64		Earth total	fielian Illud.		W minpegs	Dulana	Woodstook	Toponice	Landsov.	Banne	kugsten.	Ottawa.	Montreal.	Fredericton.
Mean of the most of	0-13	0.16	e-10	0.23	6-23	0.40	· 14	н 17	0 %	0.25	0-21	0.15	0.25	0.15	0 17	0.29
tree on tree or	0.02	e .	0.63	0.07	11-11]	0.09	0.00		0.0	0.03	() (11)	0.01	0.00		0:11	0.07
Meetice daly mount	11.1.5	0.00	0.61		6-73	0.50	0.91	j (8)	(1 5)	0.92	0.52	0 65	0.74	0.77	0.86	0.89
Date:				.5	ti	27	24	21		28	29	28	29	9	9	36
Note: - exploitly d		12	24	100	12	5	-	21	14	9	135	14	7	1.1	12	11
														-		

Monthly and Annual Summaries for the Year 1899, Fort Simpson, Macker — River—Latitude, N. 61-42 Longitude, W. 121-43'. Height above Sea, — Jogt.

			Tin	RAIN. Svor			·\\ .			month.	Strams				
Monre		Mean Min.	Mean Daily Range	Max.	Mus.	Mtl.b Range	Mills Moor	7	Feb.		- · · · · · ·	2		A parties	Thunda St
								111							
January.	7.3	29.4	22 1	10.0	54.0	64 0	15 13	0.00	()		5+	1	i	97.5	0
February .	12.8	37 2	24.4	7.0	54.0	6] 0	25 0	0.00	D	5.5	1	11	()	25 0	1)
March	3 4	15.5	22.2	26.0	37.5	ъ3-5	7.7	1.01	ij	i -	9	14	()	21 -	
April :	::4 %	11-4	20.4	56.0	11 n	$h_{1}^{-}=0$	23.1	11	1	15-4				200	4.5
May .	46-0	25 4	20.6	(4) (1	9.0	75.0	25.7		`	5.3			1)		J
June .	65-6	43.2	22 - 4	76.0	36.5	39.5	54.4	21 -1	20				0		C)
July ,	70.5	55.0	55.5	S‡ 0	35-0	±3 €)	(j1) (i	1 00	8			0	0		9
August	(i) (i	11-6	21.0	7- 0	24.0	53.0	53.75	0.5%	5			(*	()		п
September.	54.2	32.8	21.4	64.0	23.5	40.5	43.5	1.34	6			î			11
October	28 6	12 b	16.0	58 0	7.5	65.5	20.6	0.15	1	5.5	ł	9		2.0	
November	114.0	4.1	9.31	.87.0	22 (1	ão 0	41-11	0.00	ŧ.	15.7	` `	Jec	1		13
December															
Vivi															

Year ...

January 4th, blizza (d): Fee - av 19th and 20th, blizzard: March 21st and 22th, o'h, za l): May 6th, ceanes 2 dle, autorilles, geess and ducks; 12th, white war e : 13th, swans: 17th, Lard River broken up; 24th, still a highes new on ground: September 30th, violent wind storm from N.W. e : 0 der 10th, ice duffing briskly from Lard; 21st, reconstruing from Mackenzer 28d., Lard closed; 20th, Lard blocken out er out; N. e : 6er 17th, Lard block by see; 20th, Mackenzer er et ele mg.

MONTHLY and Annual Summaries for the Year 1809, Stuart's Lake, Briti h Columbia—Latitude, N. 54-28'; Longitude, W. 124-12. Height above Sea, 1.800 feet.

M			Tra	Hvi		SNOW.				t-mon. of month	Fluid r Stoms.				
Moxin		Mican Min.		Mix	Ylus.	Mithly Range	Mtl.lv Means	Ē	-11		Percent	į	1		Paris
								1.1.		111.				m.	
January.	25-4	11 %	13.6	42.9	17. 0	89.9	15 0	2.3%	1,	10.0	1	1)	1.6		
February	33 }	3.4	20.7	15-11	31.0	76.0	18.2	0.18	1		1	ì	()	3.6	
March .	27 7	9.2	15.5	51.5	35 0	86.5	18 4	() r)()	Ð	10.0	3	()		3.0	
$\Lambda_{ m pril}$ .	45-4	20.9	24.5	58-0	11-0	47 0	33 I	0.00	2	0.0	0	0	()	2 0	
May	53.0	25.5	27. 5	64.0	11.0	53 n	.39 .3	0.0		1.0	1	0	(1)		
June	65-1	:8 5	21.6	S,1 ()	28.5	54.5	\$9.3	R	.;			(1)	+ 1		
July	77 8	36.7	#i 1	93.0	29.5	63.5	57.3	R	£,			0	()		
August	67.8	331.5	34.3	\$5.0	19.9	65-1	50 G	R	3			43	11		
September.	54/8	31-1	23.7	67.0	18.0	<b>FS</b> 1	\$3.0	0.95	1				11		
Optobay .	37 4	21.7	15.7	62.0	1.0	h] 0	29.5	1.00	4	6.0		()	1		
November	37 0	20.8	16.2	45.0	11.0	34-0	28.9	0.15	1	2.0	-2	0	ŧ	0.2	
December	18.7	5.7	13.0	.90-9	31/2	71 1	12.2	0.22	2	15.0	6	1	+1	11-0	
Year	45-3	21 2	2+1	505.0	17 0	140 0		5.56	:5	50.0	20	2	'n		

January 21st and 22nd, in any rain and very warm; Polymary Eith, rain; April 5th, 1 and slighting; July 25th, polarous four had by frost; August 26th, hard frost; 31st, ice formed; October 1st, first snow; 10th, hard frost; December 22nd, 1 nn.

# V TRAV 1915 — RVATIONS AT CALMANAIL VANCOUVER ISLAN) JANUARY TO OCTOBER, 1899. LATH OF N. 48-37 — LONGIFUDE, W. 124-47. HEIGHT MOVE SEA, 130 FEFT

	Freedom (17), 241-32	Temperature.		
Mes.	Sam Spa Span Mean Sam Span Sp	Mean, Mean Mean Daily Wax Min.		
	n m m m			
Jan ter	29 80 29 79 29 78 29 79 18 8 31 8 40 .	2 29 0 42 4 35 7 6 7 50 0 19 0		
Pelaria	$29(8) \cdot 29(87) \cdot 29(84) \cdot 29(87) \cdot 36(5) \cdot 38(9) \cdot 37(.)$	- 06 4 40 8 31 8 9 0 48 0 12 0		
March	29 76 29 81 29 78 29 78 40 3 44 7 4	40 4 45 4 35 5 9 9 52 0 31 0		
Aprel	$20/84 \cdot 20/87 \cdot 20/82 \cdot 29/83 \cdot 45/6 \cdot 48/9 \cdot (1+\epsilon)$	45 1   50 1   40 1   10 0   61 0   34 0		
May	$\mathfrak{P}^{1}(85) \mathfrak{P}^{1}(86) \mathfrak{P}^{1}(84) \mathfrak{P}^{1}(85) \mathfrak{P}^{1}(48) \mathfrak{F}^{1}(48) \mathfrak{F}^{1}(48)$	- 17 9 51 6 44 3 7 3 61 0 36 0		
$J_{\mathrm{BB}}$	20 (2 2) (34 20 94 2) (00 52 8 55 1 56)	51 1 55 2 47 6 7 6 63 0 45 0		
July	$2^{n}(80,80,20,88,20,87,20,88,57,4,61,0,\ldots)$	56 4 83 2 49 6 13 6 80 0 44 0		
$A_{\beta}(x)^{-\beta}$	90-78 90-78 20-77 20-78 57 8 61 3 5 0	54 9 60 6 49 2 11 4 64 0 42 0		
Same and	$2^{6}(31/2^{6})(89/2^{6})(88/2^{6})(89/35/1)(10)(6/7)4.$	55 2 61 0 49 3 11 7 68 0 45 0		
$(x_i \leftarrow 1)_{i=1}$	29 79 29 78 29 77 29 78 48 8 51 1 48 3	2 48 6 52 2 45 0 7 2 60 0 39 0		

			No. 101 WINES FROM					Fotoe.	Rai	N.	Snow.	Sky	ogs.		
Mo	%	E 7	<u>.</u>	Z.	1.	S.W.	W	N K	- AP-	Mean F	Amit.	Days.	Ant. Days.	Touded Sky	No. of Fogs.
									-		m.		in.		
January	6	7	38	`	3	6	17	0	ς.	111	16.86	23	2.0 4	75	2
February	2	5	40	33	13	0	18	0	3	±Υ	16 11	17	6.0 5	82	0
Vlareli	IO	6	21	()	1	12	30	0	H	111	6 87	16	17 5	65	0
April	5	1	22	10	3	9	33	0	7	$1\mathrm{V}$	9.76	$18^{-1}$		56	0
Vav	1	0	13	15	3	11	20	1	17	11	8 69	17		57	1
$J_{\mathrm{un}}$ .	0	$\Theta$	s	3	2	6	48	1	20	11	1 1 55	8 '		57	5
July	l	0	13	- 3	4	0	38	1	223	ſ	□ 0.51	8		. 54	18
August	1	$\Theta$	21	. 0	1	1	18	0	54	ī	0.91	10		58	11
September	1	0	35	2	1	1	19	1	30	11	3.40	7		49	9
October	4	0	41	, 20	3	0	9	2	14	Ш	9 12	17		51	2

## FORECASTS FOR DECEMBER, 1899.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 985. These were divided as follows:-

	No.	Verified.					
District.	Issued.	No. Fully	No. Partly	No. Not	Percentage		
Manitoba	98	7.5	14	11	81.6		
Lake Superior	114	(12)	25	9	81-1		
Lower Lake Region	120	84	22	14	79.2		
Georgian Bay	115	80	20	15	78-3		
Ottawa Valley	104	73	19	12	79-3		
Upper St. Lawrence.	104	67	28	9	77:9		
Lower St. Lawrence	103	71	21	11	79-1		
Gulf	109	79	18	12	80-3		
Maritime Provinces	118	62	38	18	68-6		
Total	985	669	205	111	78:3		

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

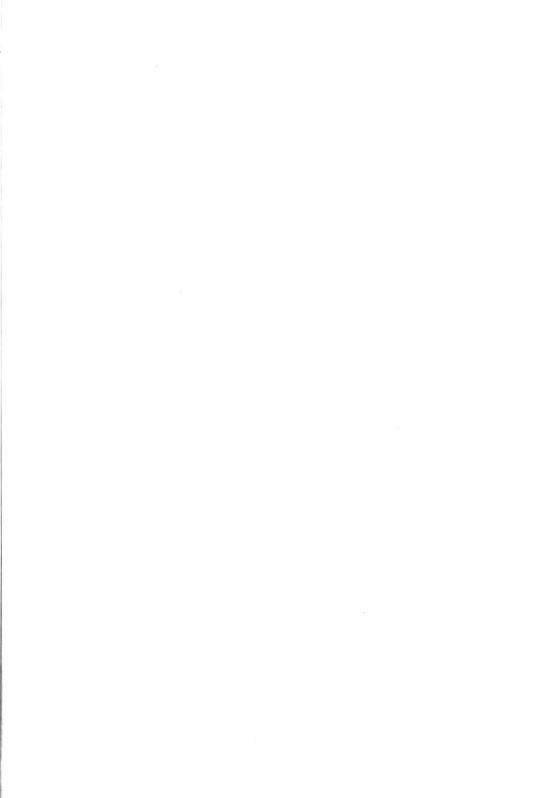
The forecasts and storm warnings for December were issued by Forecast Official H. V. Payne.

R. F. STUPART,

Director.

Meteorological Office, Toronto, 26th January, 1900.





Accessorement	
Annual (Section)	
-	

